# **WEST Search History**

Hide Items Restore Clear Cancel

DATE: Wednesday, November 24, 2004

Hide?	Set Nam	<u>te Query</u>	Hit Count			
	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ					
	L21	L20 AND L16	1			
	L20	human vascular endothelial cell	608			
	L19	L18 AND L16	64			
	L18	(osteoclast OR osteoblast OR osteocyte)	9633			
	L17	L15 AND L16	6			
	L16	pulsed electromagnetic field OR electromagnetic field	45231			
	L15	MG-63	420			
	L14	(PEMF AND VEGF)	2			
	L13	(L11 AND pulsed electromagnetic field)	4			
	L12	L11 AND electromagnetic field	62			
	L11	vascular endothelial growth factor OR VEGF	10481			
	L10	L9 AND electromagnetic field	0			
	L9	L8 AND VEGF	1600			
	L8	530/300,350.CCLS.	17411			
	L7	L6 AND VEGF	930			
	L6	514/2,12.CCLS.	12445			
	L5	FITZSIMMONS.IN.	567			
	L4	FITZSIMMONS-R-J.IN.	1			
	L3	FITZSIMMONS-R.IN.	0			
	L2	FITZSIMMONS-ROBERT.IN.	2			
	L1	(FITZSIMMONS-ROBERT-J.IN.)	1			

END OF SEARCH HISTORY

# **Hit List**

Clear Generate Collection Print Fwd Refs Bkwd Refs **Generate OACS** Search Results - Record(s) 1 through 1 of 1 returned. ☐ 1. Document ID: US 6364824 B1 Using default format because multiple data bases are involved. L1: Entry 1 of 1 File: USPT Apr 2, 2002 US-PAT-NO: 6364824 DOCUMENT-IDENTIFIER: US 6364824 B1 \*\* See image for Certificate of Correction \*\* TITLE: Stimulating cell receptor activity using electromagnetic fields DATE-ISSUED: April 2, 2002 INVENTOR-INFORMATION: NAME CITY STATE ZIP CODE COUNTRY Fitzsimmons; Robert J. Mentone CA US-CL-CURRENT: 600/13; 600/15 Full Title Citation Front Review Classification Date Reference Clear Generate Collection **Print** Fwd Refs **Bkwd Refs** Generate OACS Terms Documents (FITZSIMMONS-ROBERT-J.IN.) 1 Display Format: -Change Format

Next Page

Go to Doc#

Previous Page

# Hit List

Clear

Generate Collection

Print

Fwd Refs

**Bkwd Refs** 

**Generate OACS** 

Search Results - Record(s) 1 through 2 of 2 returned.

☐ 1. Document ID: US 3844672 A

Using default format because multiple data bases are involved.

L2: Entry 1 of 2

File: USPT

Oct 29, 1974

US-PAT-NO: 3844672

DOCUMENT-IDENTIFIER: US 3844672 A

TITLE: EXTERNALLY ADJUSTABLE TOOL CARTRIDGE ASSEMBLY

Full Title Citation Front Review Classification Date Reference

DATE-ISSUED: October 29, 1974

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Fitzsimmons; Robert

Warren

MΙ

48092

Claims

US-CL-CURRENT: 408/155; 408/714

☐ 2. Document ID: US 3625624 A

L2: Entry 2 of 2

File: USPT

Dec 7, 1971

US-PAT-NO: 3625624

DOCUMENT-IDENTIFIER: US 3625624 A

\*\* See image for Certificate of Correction \*\*

TITLE: CUTTING ASSEMBLY

DATE-ISSUED: December 7, 1971

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Fitzsimmons; Robert

Warren

US-CL-CURRENT: 408/116; 407/37, 407/46, 407/47, 408/197

ABSTRACT:

A boring bar having an end face extending transversely to the longitudinal axis of the boring bar with a slot extending completely through the boring bar and diametrically across the end face. First and second slide blocks are disposed in side-by-side overlapping relationship in the slot. The slide blocks have first ends which are disposed in the slot and extend radially in opposite directions outwardly of the boring bar to oppositely disposed second ends. A cutting element is attached to the second end at each of the slide blocks. At least one threaded fastener extends

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.3&ref=2&dbname=PGPB,USPT,US... 11/24/04

through an elongated slot in each slide block and threadedly engages the bottom of the slot in the boring bar for attaching each slide block to the boring bar and for adjusting the radial position of each slide block independently of the other. The slot in the boring bar is generally T-shaped to define guide grooves and the slide blocks are identical in configuration and include guide flanges disposed in the grooves of the slot. In one embodiment each of the slide blocks includes a gauging recess and a gauge block having gauge ends is attached to the boring bar for radially positioning the slide bars.

15 Claims, 7 Drawing figures Number of Drawing Sheets: 2

Clear Generate Collection Print Fwd Refs Bkwd Refs Generate OACS  Terms Documents  FITZSIMMONS PORERT IN	Full Title Citation Front Review Classification Date Refere	ence Claims KVMC Draw. Des
Terms Documents		
Documents	Clear Generate Collection Print Fwd R	efs Bkwd Refs Generate OACS
FITZSIMMONS POREDT IN	Terms	Documents
2	FITZSIMMONS-ROBERT.IN.	2

Display Format: - Change Format

Previous Page Next Page Go to Doc#

# **Hit List**

Clear Generate Collection Print Fwd Refs Bkwd Refs Generate OACS

# Search Results - Record(s) 1 through 1 of 1 returned.

☐ 1. Document ID: WO 200027295 A1, US 6364824 B1, AU 200017192 A, EP 1137370 A1 Using default format because multiple data bases are involved.

L4: Entry 1 of 1

File: DWPI

May 18, 2000

DERWENT-ACC-NO: 2000-399424

DERWENT-WEEK: 200226

COPYRIGHT 2004 DERWENT INFORMATION LTD

TITLE: Osteoblast stimulation method for treatment of osteoporosis, involves positioning transmitter proximate to target receptors so that electromagnetic field of preset fluctuation rate activates the target receptor

INVENTOR: FITZSIMMONS, R J

PRIORITY-DATA: 1998US-107927P (November 11, 1998), 1999US-0438749 (November 11, 1999)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200027295 A1	May 18, 2000	E	026	A61B017/52
US 6364824 B1	April 2, 2002		000	A61N002/02
<u>AU 200017192 A</u>	May 29, 2000		000	A61B017/52
EP 1137370 A1	October 4, 2001	E	000	A61B017/52

INT-CL (IPC):  $\underline{A61}$   $\underline{B}$   $\underline{17/52}$ ;  $\underline{A61}$   $\underline{N}$   $\underline{1/00}$ ;  $\underline{A61}$   $\underline{N}$   $\underline{2/00}$ ;  $\underline{A61}$   $\underline{N}$   $\underline{2/02}$ 

ence Claims KoMC Draw Des
Refs Bkwd Refs Generate OACS
Documents
1
,

Display Format: - Change Format

Previous Page

Next Page

Go to Doc#

#### Search Forms

### Hit List

Search Results

**Generate Collection User Search**e

Print

Fwd Refs

Bkwd Refs

**Generate OACS** 

**Preferences** 

Logout

**Search Results - Record(s)** 1 through 62 of 62 returned.

☐ 1. Document ID: US 20040219545 A1

Using default format because multiple data bases are involved.

L12: Entry 1 of 62

File: PGPB

Nov 4, 2004

PGPUB-DOCUMENT-NUMBER: 20040219545

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040219545 A1

TITLE: Methods for identifying small molecules that bind specific rna structural

motifs

PUBLICATION-DATE: November 4, 2004

INVENTOR-INFORMATION:

NAME

CITY

STATE

COUNTRY

RULE-47

Rando, Robert F.

Annandale

NJ

US

Welch, Eleln

Califon

NJ

US

US-CL-CURRENT: 435/6

Full   Title   Citation   Front   Review	Classification Date Reference	Sequences Attachments	Claims KOMC Draw, Desi

☐ 2. Document ID: US 20040197835 A1

L12: Entry 2 of 62

File: PGPB

Oct 7, 2004

PGPUB-DOCUMENT-NUMBER: 20040197835

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040197835 A1

TITLE: Profiling frequencies of receptor heterodimers

PUBLICATION-DATE: October 7, 2004

INVENTOR-INFORMATION:

NAME Chan-Hui, Po-Ying Shi, Yining

CITY Oakland San Jose Cupertino STATE CA

COUNTRY RULE-47

Pidaparthi, Sailaja Dua, Rajiv

Singh, Sharat

Manteca San Jose CA CA CA

CA

US US

US

US

US

US-CL-CURRENT: <u>435/7.2</u>

#### ABSTRACT:

Methods are provided for detecting formation of oligomeric complexes of molecules on the surface of cell membranes. These methods employ pairs of tagged probes and cleaving probes, each of which binds specificly to a cell surface molecule. The tagged probe includes a molecular tag that is linked to a first binding compound through a cleavable linkage, and the cleaving probe includes a second binding agent and a cleavage-inducing moiety that can cleave the linkage when within a defined proximity thereto. Binding of the two probes to cell surface molecules that have formed an oligomeric complex results in release of the molecular tag from the binding compound, providing a measure of formation of the complex.

Full	Titl	e Citation Fron	t Review	Classification	Date	Reference	Sequences	Attachments	Claims	EDMC Draw	Des
	***************************************	······································	***************************************	······································	~~~~~	·····	······································	······································	······		
	3	Document II	)· 119 20	040138562	Λ1					•	

### Document ID: US 20040138562 A1

L12: Entry 3 of 62

File: PGPB

Jul 15, 2004

PGPUB-DOCUMENT-NUMBER: 20040138562

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040138562 A1

TITLE: Devices, systems and methods for acute or chronic delivery of substances or

apparatus to extravascular treatment sites

PUBLICATION-DATE: July 15, 2004

#### INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Makower, Joshua	Los Altos	CA	US	
Lamson, Theodore C.	Pleasanton	CA	US	
Flaherty, J. Christopher	Topsfield	MA	US	
Reggie, John A.	Palo Alto	CA	US	
Chang, Johny Y.	Mountain View	CA	US	
Cantanese III, Joseph	Redwood City	CA	US	
Tholfsen, David R.	San Leandro	CA	US	

US-CL-CURRENT: 600/439; 604/164.01

#### ABSTRACT:

Methods and apparatus for delivery of substances or apparatus to target sites located outside blood vessels within the body of a human or animal patient. A vessel wall penetrating catheter is inserted into the vasculature, positioned and oriented within a blood vessel near the target extravascular site and a penetrator is advanced from the catheter so as to penetrate outwardly through the wall of the blood vessel in the direction of the target site. Thereafter, a delivery catheter is passed through a lumen of the penetrator to the target site. A desired substance or apparatus is then delivered to or obtained from the target site. In some applications, the penetrator may be retracted into the vessel wall penetrating catheter and the vessel wall penetrating catheter may be removed, leaving the delivery catheter in place for chronic or continuous delivery of substance(s) to and/or obtaining of information or samples from the target site. Alternatively, a delivery catheter having an occlusion member or balloon may be advanced into a vein or venule and the occlusion member or balloon may be used to occlude the lumen of the vein or venule during and after injection of a substance through the catheter, such that the substance will not be

carried away by normal venous blood flow and will remain in the vein or venule for a sufficient period of time to have its intended effect (e.g. to enter adjacent tissues through capillary beds drained by that vein or venule).

Full Title Citation Front Review	Classification Date Reference Sequences	Attachments Claims KWC Draw Desc

☐ 4. Document ID: US 20040127843 A1

L12: Entry 4 of 62

File: PGPB

Jul 1, 2004

PGPUB-DOCUMENT-NUMBER: 20040127843

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040127843 A1

TITLE: Glaucoma implant with therapeutic agents

PUBLICATION-DATE: July 1, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Tu, Hosheng	Newport Coast	CA	US	
Niksch, Barbara	Laguna Niguel	CA	US	
Haffner, David	Mission Viejo	CA	US	
Smedley, Gregory	Aliso Viejo	CA	US	

US-CL-CURRENT: 604/27

#### ABSTRACT:

Devices and methods are provided for the treatment of glaucoma. An ocular implant is adapted such that aqueous humor flows controllably from the anterior chamber of the eye to Schlemm's canal, bypassing the trabecular meshwork. The implant may utilize one or more bioactive agents effective in treating glaucoma or other pathology.

Full Title Citation Front Review Classification Date	Reference   Sequences   Attac	hments Claims KWMC Draw Des
☐ 5. Document ID: US 20040126882 A1		
L12: Entry 5 of 62	File: PGPB	Jul 1, 2004

PGPUB-DOCUMENT-NUMBER: 20040126882

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040126882 A1

TITLE: Regulatable, catalytically active nucleic acids

PUBLICATION-DATE: July 1, 2004

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Ellington, Andrew D. Austin TX US Hesselberth, Jay Seattle WA US

Thompson, Kristin	Arlington	MA	US
Robertson, Michael P.	Santa Cruz	CA	US
Sooter, Letha	Austin	TX	US
Davidson, Eric	Houston	TX	US
Cox, J. Colin	Austin	TX	US
Riedel, Timothy	New Braunfels	ТX	US
Wilson, Charles	Concord	MA	US
Cload, Sharon T.	Cambridge	MA	US
Keefe, Anthony D.	Cambridge	MA	US

US-CL-CURRENT: <u>435/455</u>; <u>536/23.1</u>

### ABSTRACT:

Compositions and methods are provided to make, isolate, characterize and use regulatable, catalytically active nucleic acids (RCANA). The present invention is directed to RCANA that transduce molecular recognition into catalysis. Also, RCANAs according to the invention can be used as regulatory elements to control the expression of one or more genes in a metabolic pathway. RCANAs can also be used as regulated selectable markers to create a selective pressure favoring (or disfavoring) production of a targeted bioproduct.

Full Title Citation Front Review Classification	Date Reference Seque	nces Attachments	Claims KNMC Draw Desc
☐ 6. Document ID: US 20040126818	Λ 1	***************************************	***************************************
L12: Entry 6 of 62	File: PGPB		Jul 1, 2004

PGPUB-DOCUMENT-NUMBER: 20040126818

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040126818 A1

TITLE: Detecting receptor oligomerization

PUBLICATION-DATE: July 1, 2004

### INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Chan-Hui, Po-Ying	Oakland	CA	US	
Shi, Yining	San Jose	CA	US	
Pidaparthi, Sailaja	Cupertino	CA	US	
Dua, Rajiv	Manteca	CA	US	
Singh, Sharat	San Jose	CA	US	

US-CL-CURRENT: 435/7.2

#### ABSTRACT:

Methods are provided for detecting formation of oligomeric complexes of molecules on the surface of cell membranes. These methods employ pairs of tagged probes and cleaving probes, each of which binds specificly to a cell surface molecule. The tagged probe includes a molecular tag that is linked to a first binding compound through a cleavable linkage, and the cleaving probe includes a second binding agent

and a cleavage-inducing moiety that can cleave the linkage when within a defined proximity thereto. Binding of the two probes to cell surface molecules that have formed an oligomeric complex results in release of the molecular tag from the binding compound, providing a measure of formation of the complex.

Full Title Citation Front Review Classification D	ate Reference Sequences Att	achments Claims KWMC Draw Desi
☐ 7. Document ID: US 20040096815 A	1	
L12: Entry 7 of 62	File: PGPB	May 20, 2004

PGPUB-DOCUMENT-NUMBER: 20040096815

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040096815 A1

TITLE: Method of identifying an eventual modification of at least one biological parameter making use of living cells which are subjected to a stress and living cells which are not subjected to this same stress

PUBLICATION-DATE: May 20, 2004

#### INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Perrier, Eric	Les Cotes d'Arey		FR	
Andre, Valerie	Ampuis		FR	
Grenier, Stephane	Luzinay		FR	
Reymermier, Corinne	Charly		FR	

US-CL-CURRENT: 435/4

#### ABSTRACT:

An aim of the invention is a method of identifying an eventual modification of at least one biological parameter.

The present invention relates essentially to a method of identifying an eventual modification of at least one biological parameter, characterized in that it comprises the compared proteomic and/or compared transcriptomic and/or compared genomic analysis:

- a) of living cells which are subjected to a stress, called stressed cells,
- b) of living cells which are not subjected to this same stress, called reference cells,
- c) at least one of these two classes of cells being used in a three-dimensional tissue model,

enabling eventually identifying at least one biological parameter which is modified following said stress. The invention comprises the use of this process for the screening of active principles.

# □ 8. Document ID: US 20040054354 A1

L12: Entry 8 of 62

File: PGPB

Mar 18, 2004

PGPUB-DOCUMENT-NUMBER: 20040054354

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040054354 A1

TITLE: Autologous vascular grafts created by vessel distension

PUBLICATION-DATE: March 18, 2004

INVENTOR-INFORMATION:

NAME

CITY

STATE COUNTRY

RULE-47

Vito, Raymond P.

Atlanta

GA

US

Griffis, Jack C. III

Decatur

GΑ

US

US-CL-CURRENT: 606/1

### ABSTRACT:

Devices and methods are provided for forming a vascular graft by axially distending a blood vessel to induce growth. In one embodiment, a device for distending a blood vessel of a human or animal is provided which comprises a stretching mechanism attachable directly to a blood vessel at at least two attachment positions thereon, and a means for operating the stretching mechanism to cause the blood vessel portion between said at least two attachment positions to be stretched axially. The distended portion can then be excised and used as a graft.

Full Title Citation	Front Review	Classification	Date Reference	Sequences	Attachments	Claims Kool	Draw Desi
······································	······································	······	······				

### ☐ 9. Document ID: US 20040044268 A1

L12: Entry 9 of 62

File: PGPB

Mar 4, 2004

PGPUB-DOCUMENT-NUMBER: 20040044268

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040044268 A1

TITLE: Device and method for creating a vascular graft in vitro

PUBLICATION-DATE: March 4, 2004

INVENTOR-INFORMATION:

NAME

CITY

STATE

COUNTRY

RULE-47

Vito, Raymond P.

Atlanta

GΑ

US

Griffis, Jack C. III

Decatur

GΑ

US

US-CL-CURRENT: 600/36; 435/401

#### ABSTRACT:

Methods and apparatus are provided for forming a vascular graft in vitro by axially distending a blood vessel to induce growth. The apparatus comprises a chamber

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.13&ref=12&dbname=PGPB,USPT,U... 11/24/04

containing a tissue culture medium, an inlet cannula, an outlet cannula, and a means for moving the inlet cannula, the outlet cannula, or both, to axially stretch a donor blood vessel secured between the inlet cannula and the outlet cannula in a submerged position in the tissue culture medium, wherein the inlet cannula, the outlet cannula, and the donor blood vessel are secured together to form a conduit through which the tissue culture medium can flow.

Full Title Citation Front Review Classification Dat	e Reference Sequences Attach	ments Claims KintC Draw, Desc
☐ 10. Document ID: US 20040030379 A		
L12: Entry 10 of 62	File: PGPB	Feb 12, 2004

PGPUB-DOCUMENT-NUMBER: 20040030379

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040030379 A1

 ${\tt TITLE:}$  Energetically-controlled delivery of biologically active material from an implanted medical device

PUBLICATION-DATE: February 12, 2004

#### INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Hamm, Mark A.	Lynnfield	MA	US	
Barbato, Louis J.	Franklin	MA	US	
Crowley, Robert J.	Sudbury	MA	US	
Naimark, Wendy	Cambridge	MA	US	
Patel, Hatal	Brighton	MA	US	

US-CL-CURRENT: 623/1.15; 623/1.34

#### ABSTRACT:

A medical device and system capable of providing on-demand delivery of biologically active material to a body lumen patient, and a method of making such medical device. A first coating layer comprising a biologically active material and optionally a polymeric material is disposed on the surface of the medical device. A second coating layer comprising magnetic particles and a polymeric material is disposed on the first coating layer. The second coating layer, which is substantially free of a biologically active material, protects the biologically active material prior to delivery. The system includes the medical device and a source of energy, such as an electromagnetic or mechanical vibrational energy. When the patient is exposed to the energy source, the magnetic particles move out of the second coating layer and create channels therein through which the biologically active material can be released.

Full Title Citation Front Review Classification Date	· ——————		
☐ 11. Document ID: US 20040023415 A1			······································
L12: Entry 11 of 62	File: PGPB	Feb	5, 2004

PGPUB-DOCUMENT-NUMBER: 20040023415

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040023415 A1

TITLE: Biospecific contrast agents

PUBLICATION-DATE: February 5, 2004

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Sokolov, Konstantin Austin TXUS Korgel, Brian A. Round Rock ТX US Ellington, Andrew D. Austin ΤX US Richards-Kortum, Rebecca Austin TXUS

US-CL-CURRENT: <u>4</u>36/518

#### ABSTRACT:

Methods and apparatuses for detecting a condition of a sample (including cervical cancers and pre-cancers) through reflectance and/or fluorescence imaging. A sample is obtained. One or more metallic nanoparticles and/or one or more quantum dots are obtained. The one or more metallic nanoparticles and/or one or more quantum dots are coupled to one or more biomarkers of the sample that are associated with the condition. A reflectance and/or fluorescence image of the sample is then taken. The image(s) exhibit characteristic optical scattering from the one or more metallic nanoparticles and/or characteristic fluorescence excitation from the one or more quantum dots to signal the presence of the one or more biomarkers. In this way, the condition can be readily screened or diagnosed.

Full little Untation	Front Review	Classification	Date Reference	Sequences	Attachments	Claims	KOMC	Draw, Desc
······································	······	~~~~~	~~~~					
						***********	***************************************	
☐ 12. Docui	ment ID: US 20	0040011650	) A1					
L12: Entry 12 c	of 62	•	File:	PGPB	,	Jan	22	2004
						Jan	~~,	2004

PGPUB-DOCUMENT-NUMBER: 20040011650

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040011650 A1

TITLE: Method and apparatus for manipulating polarizable analytes via

dielectrophoresis

PUBLICATION-DATE: January 22, 2004

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Zenhausern, Frederic Fountain Hills AZUS Chou, Chia-Fu Chandler AZUS Terbrueggen, Robert Henry Manhattan Beach CAUS

US-CL-CURRENT: 204/547; 204/643

#### ABSTRACT:

The present invention is directed to devices and methods for manipulating polarizable

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.13&ref=12&dbname=PGPB,USPT,U... 11/24/04

analytes via dielectrophoresis to allow for improved detection of target analytes. Microfluidic devices are configured such that the application of a voltage between field-generating electrodes results in the generation of an asymmetric electric field within the device. Some embodiments of the invention provide a physical constriction, and electrically floating conductive material or a combination of the two techniques to generating an asymmetrical field. Using dielectrophoresis, target analytes are concentrated or separated from contaminant analytes and transported to a detection module.

Fall	Title Citation Front Review Classification Date	Reference	Sequences	Attachments	Claims	Кийс	Drawn Desc
	12 Down and ID 11G 20040000122 Ad	mannan mana	***************************************		mannen	************	mannana.
	13. Document ID: US 20040009122 A1 Entry 13 of 62	File:	PGPB		Jan	15,	2004

PGPUB-DOCUMENT-NUMBER: 20040009122

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040009122 A1

TITLE: Contrast agents

PUBLICATION-DATE: January 15, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Klaveness, Jo	Oslo		NO	
Naevestad, Anne	Oslo		NO	
Tolleshaug, Helge	Oslo		NO	

US-CL-CURRENT: 424/9.1; 424/178.1, 530/391.1

#### ABSTRACT:

The invention provides a composition of matter of the formula (I): V-L-R, where V is a vector moiety having affinity for an angiogenesis-related endothelias cell receptor, L is a linker moiety or a bond and R is a detectable moiety, characterised in that V is a non-peptidic organic group, or V is peptidic and R is a macromolecular or particulate species providing a multiplicity of labels detectable in in vivo imaging.

Full Title Citation Front Review Classification	Date Reference	Sequences Attachments	Claims KMMC Draw Desi
	······································		
☐ 14. Document ID: US 2004000529	7 A1		
L12: Entry 14 of 62	File:	PGPB	Jan 8, 2004

PGPUB-DOCUMENT-NUMBER: 20040005297

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040005297 A1

TITLE: Biological scaffold

PUBLICATION-DATE: January 8, 2004

INVENTOR-INFORMATION:

NAME

CITY

STATE

COUNTRY

RULE-47

Connelly, Patrick R.

Babalola, Omotunde M.

Rochester Long Island NY

NY

US US

US-CL-CURRENT: 424/93.7; 424/423, 435/366

#### ABSTRACT:

A cell-scaffold composition that comprised of a at last five layers biocompatible material, each of which layers is coated with a biological sealant material and contains different cells The cell-scaffold composition is located in a bioreactor that contains devices for mechanically stimulating each of the cells in each of the layers at distinct frequencies.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	KNMC Draw Desc
······································	······································			······································	······			······	 ······

☐ 15. Document ID: US 20030216337 A1

L12: Entry 15 of 62

File: PGPB

Nov 20, 2003

PGPUB-DOCUMENT-NUMBER: 20030216337

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030216337 A1

TITLE: Composition and imaging methods for pharmacokinetic and pharmacodynamic evaluation of therapeutic delivery system

PUBLICATION-DATE: November 20, 2003

INVENTOR-INFORMATION:

NAME

CITY

STATE

COUNTRY

RULE-47

Nov 6, 2003

Hallahan, Dennis E.

Nashville

TN

US-CL-CURRENT: 514/44; 424/1.73

#### ABSTRACT:

A halogen-labeled gene therapy construct that includes halogen-labeled nucleic acids, methods for preparing a halogenated gene therapy construct, and methods for in vivo imaging of the same. Also provided are methods for non-invasive drug detection in a subject using a labeled antibody that recognizes a heterologous antigen conjugated to, encoded by, or otherwise associated with the drug.

Full Title Citation Front Review Classificat	tion   Date   Reference   Sequences   Attach	iments Claims KiMC Draw, Desi
☐ 16. Document ID: US 20030207		***************************************
L12: Entry 16 of 62	File: PGPR	Nov. 6 2002

File: PGPB

PGPUB-DOCUMENT-NUMBER: 20030207832

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030207832 A1

TITLE: Inducible expression vectors and methods of use thereof

PUBLICATION-DATE: November 6, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Tsang, Thomas Chun-Chang Tucson AZUS Gerner, Eugene W. Tucson ΑZ US Harris, David T. Tucson AZUS Hersh, Evan Tuscon AZUS Vasanwala, Farha Tucson AZUS

US-CL-CURRENT: <u>514/44</u>; <u>600/1</u>

#### ABSTRACT:

The present invention relates to inducible gene expression constructs and methods of inducing gene expression using a combination of inducing agents.

Full Title Citation Front Review Classification	Date   Reference   Sequences   Atta	chments Claims KMC Draw, Desc
☐ 17. Document ID: US 2003020404	49 A1	and the second s
L12: Entry 17 of 62	File: PGPB	Oct 30, 2003

PGPUB-DOCUMENT-NUMBER: 20030204049

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030204049 A1

TITLE: Peptide-based compounds

PUBLICATION-DATE: October 30, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Cuthbertson, Alan Oslo NO Indrevoll, Bard Oslo NO

US-CL-CURRENT: <u>530</u>/317

#### ABSTRACT:

The invention relates to new peptide-based compounds for use as diagnostic imaging agents or as therapeutic agents wherein the agents comprise a targeting vector which binds to receptors associated with integrin receptors.

Full Title Citation Front Review Classification Date	Reference   Sequences   Attachments   C	laims   KWMC   Draw, Desc
☐ 18. Document ID: US 20030176639 A1		
L12: Entry 18 of 62	File: PGPB	Sep 18, 2003

PGPUB-DOCUMENT-NUMBER: 20030176639

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030176639 A1

TITLE: Peptide-based compounds

PUBLICATION-DATE: September 18, 2003

INVENTOR-INFORMATION:

NAME

CITY STATE

COUNTRY

RULE-47

Cuthbertson, Alan

Oslo

NO

US-CL-CURRENT: 530/317; 424/9.34, 530/322

#### ABSTRACT:

This invention relates to new peptide-based compounds and their use in therapeutically effective treatments as well as for diagnostic imaging techniques. More specifically the invention relates to the use of such peptide-based compounds used as targeting vectors that bind to receptors associated with angiogenesis, in particular the .alpha.v.beta.3 integrin receptor. Such contrast agents may thus be used for diagnosis of for example malignant diseases, heart diseases, inflammation-related diseases, rheumatoid arthritis and Kaposi's sarcoma. Moreover such compounds may also be used in therapeutic treatment of these diseases.

Full	Title	Citation	Frent	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KOMC	Drawn Desi
······································		······································	······································		······		······					

☐ 19. Document ID: US 20030171640 A1

L12: Entry 19 of 62

File: PGPB

Sep 11, 2003

PGPUB-DOCUMENT-NUMBER: 20030171640

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030171640 A1

TITLE: Electromagnetic method of treatment of lesions associated with inadequate blood perfusion, partial denervation, tissue loss, pain, edema, inflammation and infection

PUBLICATION-DATE: September 11, 2003

INVENTOR-INFORMATION:

NAME

CITY

STATE

COUNTRY

RULE-47

Canedo, Luis

Colonia del Yalle C.P.

ΜX

US-CL-CURRENT: 600/9

ABSTRACT:

A method of treating a body lesion associated with inadequate blood perfusion, partial denervation, tissue loss, pain, edema, and/or infection, comprising applying to a subject afflicted with a lesion, externally and non-invasively at a site removed from the lesion, analgesic, angiogenic, vasculogenic, nerve growth, osteogenic, antiedema, anti-inflammation and/or wound repair effective electromagnetic fields (EMFs)

comprising frequencies of a few Hertz to less than about 300 Hz and static magnetic field components from a few microTesla to a maximum intensity of about 0.3 to about 0.8 mT. used alone or in combination with a homogeneous static magnetic field of about 40 to about 80 mT or about 400 to about 800 gauss.

Full Title Citation F	Front Review Classification	Date Reference	Sequences Attachment	S Claims KOMC Draw Desc
		······	·····	

☐ 20. Document ID: US 20030165482 A1

L12: Entry 20 of 62

File: PGPB

Sep 4, 2003

PGPUB-DOCUMENT-NUMBER: 20030165482

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030165482 A1

TITLE: Methods and compositions for tissue regeneration

PUBLICATION-DATE: September 4, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Rolland, Eric Divonne les bains Hunziker, Thomas Oberhofen CH Mis, Beatrice Lausanne CHRinsch, Christopher Lausanne CH

US-CL-CURRENT: 424/93.21; 424/93.7

#### ABSTRACT:

The present invention provides the use and composition of matter of angiogenic or other growth/cytokine factors expressed by mixtures of allogeneic human cell strains or lines of various types and stages of differentiation. Also provided are unencapsulated preparations (mixed with or applied to extracellular matrix material or synthetic biocompatible substances) for the purpose of temporary application to wounds or defects in the skin or other tissues for the restoration of blood supplying connective tissue to enable organ-specific cells to reestablish organ integrity as well as to inhibit excessive scar formation.

Full Title Citation Front Review	Classification Date	Reference	Sequences	Attachments Cia	ims KWMC	Drawi Desi
		***************************************		***************************************		

# ☐ 21. Document ID: US 20030144658 A1

L12: Entry 21 of 62

File: PGPB

Jul 31, 2003

PGPUB-DOCUMENT-NUMBER: 20030144658

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030144658 A1

TITLE: Radio frequency pulmonary vein isolation

PUBLICATION-DATE: July 31, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Schwartz, Yitzhack	Haifa	CA	IL	1,
Govari, Assaf	Haifa		IL	
Yaron, Uri	Zichron-Yaacov		IL	
Leatham, Marcia	Orange		US	
Levin, Michael	Haifa		IL	

US-CL-CURRENT: 606/41

#### ABSTRACT:

A catheter introduction apparatus provides a radially expandable helical coil as a radiofrequency emitter. In one application the emitter is introduced percutaneously, and transseptally advanced to the ostium of a pulmonary vein. The emitter is radially expanded, which can be accomplished by inflating an anchoring balloon about which the emitter is wrapped, in order to cause the emitter to make circumferential contact with the inner wall of the pulmonary vein. The coil is energized by a radiofrequency generator, and a circumferential ablation lesion is produced in the myocardial sleeve of the pulmonary vein, which effectively blocks electrical propagation between the pulmonary vein and the left atrium.

Full	Title Citation Front Review Classification Date Re	ference   Sequences   Attachments   Clai	ms KWMC Draw Desi
······			
	22. Document ID: US 20030104520 A1		
L12:	Entry 22 of 62	File: PGPB	Jun 5, 2003

PGPUB-DOCUMENT-NUMBER: 20030104520

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030104520 A1

TITLE: Regulatable, catalytically active nucleic acids

PUBLICATION-DATE: June 5, 2003

#### INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ellington, Andrew D.	Austin	TX	US	
Hesselberth, Jay	Austin	TX	US	
Marshall, Kristin A.	Cambridge	MA	US	
Robertson, Michael P.	Austin	TX	US	
Sooter, Letha	Austin	TX	US	
Davidson, Eric	Austin	TX	US	
Cox, J. Colin	Austin	TX	US	
Reidel, Timothy	Austin .	TX	US	

US-CL-CURRENT: 435/69.1; 435/320.1, 435/325, 514/7, 530/327, 530/328, 530/329, 536/23.5

#### ABSTRACT:

Compositions and methods are provided to make, isolate, characterize and use

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.13&ref=12&dbname=PGPB,USPT,U... 11/24/04

regulatable, catalytically active nucleic acids (RCANA). RCANA may be used for regulating gene expression and in assays to detect the presence of ligands or to detect activation by an effector of an RCANA bound to a solid support such as a chip or multi-well plate. Also disclosed are compositions and methods for automating the selection procedures of the present invention.

Full	Title	Citation Front Review Classification Date Reference Sequences Attachments Claims Kimic Draw Desc	
	23.	Document ID: US 20030078562 A1	

L12: Entry 23 of 62

File: PGPB

Apr 24, 2003

PGPUB-DOCUMENT-NUMBER: 20030078562

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030078562 A1

TITLE: Methods and apparatus for acute or chronic delivery of substances or apparatus to extravascular treatment sites

PUBLICATION-DATE: April 24, 2003

#### INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Makower, Joshua	Los Altos	CA	US	NOLL 1,
Lamson, Theodore C.	Pleasonton	CA	US	
Flaherty, J. Christopher	Topsfield	MA	US	
Reggie, John A.	Palo Alto	CA	US	
Chang, John Y.	Mountain View	CA	US	
Catanese, Joseph III	Redwood City	CA	US	
Tholfsen, David R.	San Francisco	CA	us	

US-CL-CURRENT: 604/509

#### ABSTRACT:

Methods and apparatus for delivery of substances or apparatus to target sites located outside blood vessels within the body of a human or animal patient. A vessel wall penetrating catheter is inserted into the vasculature, positioned and oriented within a blood vessel near the target extravascular site and a penetrator is advanced from the catheter so as to penetrate outwardly through the wall of the blood vessel in the direction of the target site. Thereafter, a delivery catheter is passed through a lumen of the penetrator to the target site. A desired substance or apparatus is then delivered to or obtained from the target site. In some applications, the penetrator may be retracted into the vessel wall penetrating catheter and the vessel wall penetrating catheter may be removed, leaving the delivery catheter in place for chronic or continuous delivery of substance(s) to and/or obtaining of information or samples from the target site. Alternatively, a delivery catheter having an occlusion member or balloon may be advanced into a vein or venule and the occlusion member or balloon may be used to occlude the lumen of the vein or venule during and after injection of a substance through the catheter, such that the substance will not be carried away by normal venous blood flow and will remain in the vein or venule for a sufficient period of time to have its intended effect (e.g. to enter adjacent tissues through capillary beds drained by that vein or venule).

# ☐ 24. Document ID: US 20030059764 A1

L12: Entry 24 of 62

File: PGPB

Mar 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030059764

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030059764 A1

TITLE: Multiplexed cell analysis system

PUBLICATION-DATE: March 27, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Ravkin, Ilya Palo Alto CA US Goldbard, Simon San Jose CA US Hyun, William C. San Francisco CA US Zarowitz, Michael A. San Carlos CA US Beske, Oren E. Belmont CA US

US-CL-CURRENT: 435/4; 435/7.21

### ABSTRACT:

Systems including apparatus, methods, compositions, and kits for multiplexed analysis of biological systems using nonpositional and/or positional arrays of coded carriers.

Full Title	Citation   Front   Review   Classification   Date   Reference   Sequences   Attachments   Claims   KMC   Draw, Desi
***************************************	
□ 25.	Document ID: US 20030050692 A1

L12: Entry 25 of 62

File: PGPB

Mar 13, 2003

PGPUB-DOCUMENT-NUMBER: 20030050692

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030050692 A1

TITLE: Delivery of therapeutic capable agents

PUBLICATION-DATE: March 13, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47

Sirhan, Motasim Sunnyvale CA US Yan, John Los Gatos CA US

US-CL-CURRENT: 623/1.42; 623/1.43

#### ABSTRACT:

Devices and methods for reducing, inhibiting, or treating restenosis and hyperplasia after intravascular intervention are provided. In particular, the present invention provides luminal prostheses which allow for controlled release of at least one therapeutic capable agent with increased efficacy to selected locations within a patient's vasculature to reduce restenosis. An intraluminal prosthesis may comprise an expandable structure and a source adjacent the expandable structure for releasing the therapeutic capable agent into a body lumen to reduce smooth muscle cell proliferation.

Fall 1	itle Citation Front	Review Classification Date	Reference	Sequences	Attachments	Claims	KWIC	Drawn Desi
		US 20030049841 A1	······································				***************************************	·····
L12: E1	ntry 26 of 62		File:	PGPB		Mar	13,	2003

PGPUB-DOCUMENT-NUMBER: 20030049841

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030049841 A1

TITLE: High throughput or capillary-based screening for a bioactivity or biomolecule

PUBLICATION-DATE: March 13, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Short, Jay M.	Rancho Santa Fe	CA	US	TOLL 17
Keller, Martin	San Diego	CA	US	
Lafferty, William Michael	Encinitas	CA	US	

US-CL-CURRENT: <u>435</u>/<u>449</u>

#### ABSTRACT:

Provided is a method of screening or enriching a sample containing polynucleotides from a mixed population of organisms. The method includes creating a DNA library from a plurality of nucleic acid sequences of a mixed population of organisms and separating clones containing a polynucleotide sequence of interest on an analyzer detects a detectable molecule on a probe or bioactive substrate. The analyzer includes FACS devices, SQUID devices and MCS devices. The separated or enrich library can then be further process by activity based screening or sequence based screening. In addition, the enriched sequence can be compared to a database and to identify sequences in the database which have homology to a clone in the library thereby obtaining a nucleic acid profile of the mixed population of organisms.

Full Title Citation Front Review Classification Date	Reference Sequences	Attachments Claims KiMC Draw Desc
	······	
☐ 27. Document ID: US 20030036773 A1		
L12: Entry 27 of 62	File: PGPB	Feb 20, 2003

PGPUB-DOCUMENT-NUMBER: 20030036773

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030036773 A1

TITLE: Systems and methods for treatment of coronary artery disease

PUBLICATION-DATE: February 20, 2003

INVENTOR-INFORMATION:

NAME	CITY	GET.EE	~~	
771	CIII	STATE	COUNTRY	RULE-47
Whitehurst, Todd K.	Frazier Park	CA	US	
McGivern, James P.	Stevenson Ranch	CA	US	
McClure, Kelly H.	Simi Valley	CA	US	
Stultz, Mark R.	Maple Grove	MN	US	

US-CL-CURRENT: 607/3; 607/120

#### ABSTRACT:

Methods and systems for treatment of coronary artery disease (CAD) include implantation of the discharge portion(s) of a catheter and, optionally, electrodes on a lead, near the tissue(s) to be stimulated. Stimulation pulses, i.e., drug infusion pulses and optional electrical pulses, are supplied by a stimulator implanted remotely, and through the catheter or lead, which is tunneled subcutaneously between the stimulator and stimulation site. Stimulation sites include the coronary arteries, the aorta, the left ventricle, the left atrium, and/or the pulmonary veins, among other locations. Disclosed treatments include drugs used for acute treatment of CAD, for chronic treatment of CAD, to promote angiogenesis, and/or as AGE Crosslink Breakers, among other drugs. For instance, the systems and methods reduce or eliminate the incidence of CAD and related morbidities, improve symptoms resulting from CAD, and/or improve cardiac blood flow, cardiac function, and patient quality of life.

Full	Title Citation Front Review Classification Date	Reference Sequences	Attachments Claims KNMC Draw. Desc
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	28. Document ID: US 20030012779 A1		
L12:	Entry 28 of 62	File: PGPB	Jan 16, 2003

PGPUB-DOCUMENT-NUMBER: 20030012779

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030012779 A1

TITLE: Methods for sterilizing preparations of monoclonal immunoglobulins

PUBLICATION-DATE: January 16, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Grieb, Teri	Damascus	MD	US	.,
Burgess, Wilson H.	Clifton	VA	US	
Drohan, William N.	Springfield	VA	US	
Forng, Ren-Yo	Potomac	MD	US	
MacPhee, Martin	Montgomery Village	MD	US	
Mann, David M.	Gaithersburg	MD	US	
McBain, Anna	Derwood	MD	US	

US-CL-CURRENT: 424/130.1

#### ABSTRACT:

Methods are disclosed for sterilizing preparation of monoclonal immunoglobulins to reduce the level of active biological contaminants such as viruses, bacteria, yeasts, molds, mycoplasmas, prions and parasites.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KMC | Draw, Des

☐ 29. Document ID: US 20030004556 A1

L12: Entry 29 of 62

File: PGPB

Jan 2, 2003

PGPUB-DOCUMENT-NUMBER: 20030004556

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030004556 A1

TITLE: Low intensity light therapy for the manipulation of fibroblast, and

fibroblast-derived mammalian cells and collagen

PUBLICATION-DATE: January 2, 2003

INVENTOR-INFORMATION:

NAME

CITY

STATE

COUNTRY

RULE-47

McDaniel, David H.

Virginia Beach

VA

US

US-CL-CURRENT: 607/88; 607/89

#### ABSTRACT:

Disclosed is a method for treating various dermatalogical conditions using electromagnetic radiation. Particularly preferred are narrowband, multichromatic electromagnetic radiation emitters having a dominant emissive wavelength corresponding to the peak absorption wavelength of the mammalian tissue targetted for treatment. Topical compositions are disclosed for pretreating the targetted tissue to alter the peak absorption wavelength of the tissue.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC	Draw Desi

# □ 30. Document ID: US 20030004403 A1

L12: Entry 30 of 62

File: PGPB

Jan 2, 2003

PGPUB-DOCUMENT-NUMBER: 20030004403

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030004403 A1

TITLE: Gateway platform for biological monitoring and delivery of therapeutic

compounds

PUBLICATION-DATE: January 2, 2003

INVENTOR-INFORMATION:

NAME

CITY

STATE

COUNTRY

RULE-47

Drinan, Darrel San Diego CA US Edman, Carl F. San Diego CA US Merz, Diethard San Diego CA US

US-CL-CURRENT: <u>600</u>/301

#### ABSTRACT:

The invention relates to methods and devices for remote or distributed continuous monitoring of physiologically relevant states. The invention provides for methods to automatically detect deviations or other states in physiological parameters and automatically alert a measured subject, user or other authorized party. The device provides for a universal platform for sensors, and further provides for the automatic compensation or distribution of devices or bioactive agents at appropriate levels and/or intervals in response to deviations or other states sensed in various physiological parameters.

Full Title Citation Front Review Classification	Date Reference Sequences Attachr	nents Claims KWMC Draw. Desc
☐ 31. Document ID: US 20030003220	A1	
L12: Entry 31 of 62	File: PGPB	Jan 2, 2003

PGPUB-DOCUMENT-NUMBER: 20030003220

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030003220 A1

TITLE: Coating a medical appliance with a bubble jet printing head

PUBLICATION-DATE: January 2, 2003

### INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Zhong, Sheng-Ping	Northborough	MA	US	NOLL 47
Boulais, Dennis R.	Danielson	CT	US	
Mohan, Kshitij	Sudbury	MA	US	
Austin, Michael	Galway		IE	
Weber, Jan	Galway		IE	

US-CL-CURRENT: 427/2.1; 118/300, 427/258, 427/458

#### ABSTRACT:

System and method for coating a medical appliance is provided. In accord with on embodiment, a system for applying a coating to a medical appliance having accessible patterned surfaces is provided. This system may include: a processor, a support, and a bubble jet printing head having individual printing nozzles. In this system the support may be adapted to hold the medical appliance and to provide direct access for a coating to contact the exposed external patterned surfaces of the medical appliance. The bubble jet printing head in this system may move with respect to the medical appliance and may be in communication with a source of coating and with the processor. The processor in this system may contain commands that instruct the bubble jet printing head to force coating onto the accessible patterned surfaces of the medical appliance in a pattern that correlates with the accessible patterned surfaces of the medical appliance.

# ☐ 32. Document ID: US 20020193785 A1

L12: Entry 32 of 62

File: PGPB

Dec 19, 2002

PGPUB-DOCUMENT-NUMBER: 20020193785

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020193785 A1

TITLE: Method and apparatus for heating inflammed tissue

PUBLICATION-DATE: December 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Naghavi, Morteza	Houston	TX	US	1,022 17
Guo, Bujin	Houston	TX	US	
Lal, Birendra	Houston	TX	US	
Casscells, S. Ward III	Houston	TX	US	
Willerson, James T.	Houston	TX	US	

US-CL-CURRENT: 606/28; 607/96

#### ABSTRACT:

The present invention relates to methods for treating inflammation in body tissues. More specifically, certain disclosed methods relate to selectively inducing apoptosis in inflammatory immune cells by heating cells for a sufficient time and at a sufficient temperature to induce programmed cell death. The disclosed stents can be placed in contact with the inflammatory cells and heated under controlled conditions. The disclosed apparatus and methods are particularly suitable for treating athersclerotic plaques.

Full Title Citation Front Review	Classification Date Reference Sequences Attachi	nents Claims KWIC Draw, Desc

### ☐ 33. Document ID: US 20020151808 A1

L12: Entry 33 of 62

File: PGPB

Oct 17, 2002

PGPUB-DOCUMENT-NUMBER: 20020151808

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020151808 A1

TITLE: Method and apparatus for characterizing cardiac tissue from local electrograms

PUBLICATION-DATE: October 17, 2002

INVENTOR-INFORMATION:

NAME

CITY

STATE

COUNTRY

RULE-47

Schwartzman, Armin

Palo Alto

CA

TC

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.13&ref=12&dbname=PGPB,USPT,U... 11/24/04

US-CL-CURRENT: 600/512

#### ABSTRACT:

The property of cardiac tissue at a local site, a plurality of sites or in a region of a heart may be characterized based on local electrograms measured at the local site, at a plurality of sites or in the region, respectively. The property may be characterized by normalizing the local electrogram, extracting a feature vector from the normalized electrogram, and classifying the tissue property based on the feature vector. The method of the invention may further comprise computing a map of the tissue property and treating the tissue based on the resultant map. Apparatus to characterize the property includes a catheter and a processor to normalize the local electrogram, extract the feature vector from the electrogram and classify the tissue based on the feature vector.

Full	Title Citation Front	Review Classification Date	Reference Sequences	Attachments Claims KiMC Draw, Desi
	34. Document ID:	US 20020133223 A1		
L12:	Entry 34 of 62		File: PGPB	Sep 19, 2002

PGPUB-DOCUMENT-NUMBER: 20020133223

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020133223 A1

TITLE: Intravascular device and method for axially stretching blood vessels

PUBLICATION-DATE: September 19, 2002

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Vito, Raymond P. Atlanta GA US Griffis, Jack C. III Decatur GA US

US-CL-CURRENT: 623/1.18; 623/1.38

#### ABSTRACT:

Intravascular devices and methods are provided for forming a vascular graft by axially distending a blood vessel to induce growth. These devices advantageously can be implanted via a catheter, thereby eliminating the need for a more invasive implantation procedure when the stretching is to be done in vivo. Preferably, the device for axially distending a blood vessel to induce growth of the vessel includes an intravascular stretching mechanism attachable directly to an interior lumen portion of the blood vessel, and a means for operating the stretching mechanism to cause the vessel to distend axially. The stretching mechanism can include a pair of wires or stents that engage the blood vessel wall. Components of the stretching mechanism can include a shape memory material.

The state of the s		y									
Full	Title	Cit attack	F 4	Г.			· · · · · · · · · · · · · · · · · · ·	.1			KMIC Draw, Desi
	1111	- vitation ;	FIGURE	n eview	: Ulassification	Date	Reference	Seduences	Attachments	01-1-1	1/204C C O
					·			9-44-65-5	wread injents	i biaims;	rumu ; brain, besi

☐ 35. Document ID: US 20020133115 A1

L12: Entry 35 of 62

File: PGPB

Sep 19, 2002

PGPUB-DOCUMENT-NUMBER: 20020133115

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020133115 A1

TITLE: Apparatus and methods for capture of medical agents

PUBLICATION-DATE: September 19, 2002

INVENTOR-INFORMATION:

NAME

CITY Redmond STATE COUNTRY WA US

RULE-47

Gordon, Lucas S.
Gordon, Mary Jo

Carnation

WA

US

Kamm, Lawrence

San Diego

CA US

US-CL-CURRENT: 604/96.01; 604/246, 604/522, 604/523, 607/103

#### ABSTRACT:

The present invention relates to catheter devices and methods for their use to modulate medical agents at selected locations in a patient's body.

Full Title Citation Front Review Classification Date Reference	e Sequences Attachments Claims RMC Draw. Desc

☐ 36. Document ID: US 20020082679 A1

L12: Entry 36 of 62

File: PGPB

Jun 27, 2002

PGPUB-DOCUMENT-NUMBER: 20020082679

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020082679 A1

TITLE: Delivery or therapeutic capable agents

PUBLICATION-DATE: June 27, 2002

INVENTOR-INFORMATION:

NAME

CITY

STATE

COUNTRY

RULE-47

Sirhan, Motasim

Sunnyvale

CA

Yan, John

Los Gatos

CA

US US

US-CL-CURRENT: 623/1.15; 424/426, 623/1.42

#### ABSTRACT:

A device and a method using the same, for reducing restenosis and hyperplasia after intravascular intervention. In particular, the present invention provides luminal prostheses which allow for controlled release of at least one therapeutic capable agent with increased efficacy to selected locations within a patient's vasculature to reduce restenosis. An intraluminal prosthesis may comprise an expandable structure and a source adjacent the expandable structure for releasing the therapeutic capable

Full Title Citation Front Review Classification Date Reference Sequences Attachments Claims KMC Draw Des

☐ 37. Document ID: US 20020048563 A1

L12: Entry 37 of 62

File: PGPB

Apr 25, 2002

PGPUB-DOCUMENT-NUMBER: 20020048563

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020048563 A1

TITLE: Methods and compositions for tissue regeneration

PUBLICATION-DATE: April 25, 2002

INVENTOR-INFORMATION:

NAME

CITY .

STATE

COUNTRY

RULE-47

Baetge, E. Edward

St Sulpice

CH

Hunziker, Thomas

Oberhofen

CH

Ronfard, Vincent

Lausanne

CH

US-CL-CURRENT: <u>424/93.7</u>; <u>435/366</u>, <u>435/368</u>

#### ABSTRACT:

The present invention provides the use and composition of matter of angiogenic or other growth factors expressed by combining various types and stages of differentiation of allogeneic human cell strains or lines in unencapsulated pastes (mixed with or applied to extracellular matrix material or synthetic biocompatible substances) to be temporarily applied to wounds or defects in the skin or other tissues for the restoration of blood supplying connective tissue to enable organspecific cells to reestablish organ integrity as well as to inhibit excessive scar formation.

Full	Title	Citation Front Review Classification Date Reference Sequences Attachments Claims RMC Draw. Desc	
	38	Document ID: US 20020040222 A 1	

Document ID: US 20020040233 A1

L12: Entry 38 of 62

File: PGPB

Apr 4, 2002

PGPUB-DOCUMENT-NUMBER: 20020040233

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020040233 A1

TITLE: Pulsed electromagnetic energy treatment apparatus and method

PUBLICATION-DATE: April 4, 2002

INVENTOR-INFORMATION:

NAME

CITY

STATE

COUNTRY RULE-47

George, Frank R.

Scottsdale

AZ

Loya, Arthur A. Ritz, Mary C.

Mesa Scottsdale AZ AZ US US

Bryant, Robert T.

Tempe

AZ

US

US-CL-CURRENT: 607/2

#### ABSTRACT:

An apparatus and method for the treatment of chronic wounds using electromagnetic energy. The apparatus includes a generator and at least one applicator. The generator can produce electromagnetic energy and the applicator can apply the electromagnetic energy produced by the generator. A detector is disposed on the applicator that can measure the field strength of the electromagnetic energy applied.

Full	Title	Citation Fro	nt Revi	ew Classification	Date Reference	Sequences	Attachments	Claims	F1001C	Draw, Desc	
	39.	Document	ID: U	S 6814733 B2				•	•		
L12:	Entr	y 39 of 62	2		File:	USPT		No	v 9,	2004	

US-PAT-NO: 6814733

DOCUMENT-IDENTIFIER: US 6814733 B2

TITLE: Radio frequency pulmonary vein isolation

DATE-ISSUED: November 9, 2004

### INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schwartz; Yitzhack	Haifa			IL
Govari; Assaf	Haifa			IL
Yaron; Uri	Zichron-Yaacov			II.
Leatham; Marcia	Orange	CA		11
Levin; Michael	Haifa			IL

US-CL-CURRENT: 606/41; 128/898, 606/45, 607/112, 607/113, 607/116, 607/88

#### ABSTRACT:

A catheter introduction apparatus provides a radially expandable helical coil as a radiofrequency emitter. In one application the emitter is introduced percutaneously, and transseptally advanced to the ostium of a pulmonary vein. The emitter is radially expanded, which can be accomplished by inflating an anchoring balloon about which the emitter is wrapped, in order to cause the emitter to make circumferential contact with the inner wall of the pulmonary vein. The coil is energized by a radiofrequency generator, and a circumferential ablation lesion is produced in the myocardial sleeve of the pulmonary vein, which effectively blocks electrical propagation between the pulmonary vein and the left atrium.

36 Claims, 12 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 5

# ☐ 40. Document ID: US 6761816 B1

L12: Entry 40 of 62

File: USPT

Jul 13, 2004

US-PAT-NO: 6761816

DOCUMENT-IDENTIFIER: US 6761816 B1

TITLE: Printed circuit boards with monolayers and capture ligands

DATE-ISSUED: July 13, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Blackburn; Gary	Glendora	CA		0001(11(1
Creager; Stephen E.	Central	sc		•
Fraser; Scott	La Canada	CA		
Irvine; Bruce D.	Glendora	CA		
Meade; Thomas J.	Altadena	CA		
O'Connor; Stephen D.	Pasadena	CA		
Terbrueggen; Robert H.	Manhattan Beach	CA		
Vielmetter; Jost G.	Pasadena	CA		
Welch; Thomas W.	Pasadena	CA		

US-CL-CURRENT: 205/777.5; 204/403.01

#### ABSTRACT:

The invention relates to compositions and methods useful in the acceleration of binding of target analytes to capture ligands on surfaces. Detection proceeds through the use of an electron transfer moiety (ETM) that is associated with the target analyte, either directly or indirectly, to allow electronic detection of the ETM.

34 Claims, 52 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 22

Full Title Citation Front Review Classification [	Date Reference Claims KMC Draw, Desc

# ☐ 41. Document ID: US 6733435 B2

L12: Entry 41 of 62

File: USPT

May 11, 2004

US-PAT-NO: 6733435

DOCUMENT-IDENTIFIER: US 6733435 B2

# \*\* See image for Certificate of Correction \*\*

TITLE: Electromagnetic method of treatment of lesions associated with inadequate blood perfusion, partial denervation, tissue loss, pain, edema, inflammation and infection

DATE-ISSUED: May 11, 2004

INVENTOR-INFORMATION:

NAME

CITY

STATE ZIP CODE

COUNTRY

Canedo; Luis

Colonia del Yalle C.P. 03001

ΜX

US-CL-CURRENT: 600/9

#### ABSTRACT:

A method of treating a body lesion associated with inadequate blood perfusion, partial denervation, tissue loss, pain, edema, and/or infection, comprising applying to a subject afflicted with a lesion, externally and non-invasively at a site removed from the lesion, analgesic, angiogenic, vasculogenic, nerve growth, osteogenic, antiedema, anti-inflammation and/or wound repair effective electromagnetic fields (EMFs) comprising frequencies of a few Hertz to less than about 300 Hz and static magnetic field components from a few microTesla to a maximum intensity of about 0.3 to about 0.8 mT. used alone or in combination with a homogeneous static magnetic field of about 40 to about 80 mT or about 400 to about 800 gauss.

66 Claims, 29 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 16

Full	Title	Citation Front Review Classification	Date Reference Claims KIMO Draw, Desc
	42.	Document ID: US 6725085 B2	

L12: Entry 42 of 62

File: USPT

Apr 20, 2004

US-PAT-NO: 6725085

DOCUMENT-IDENTIFIER: US 6725085 B2

\*\* See image for <u>Certificate of Correction</u> \*\*

TITLE: Method and apparatus for characterizing cardiac tissue from local electrograms

DATE-ISSUED: April 20, 2004

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Schwartzman; Armin

Palo Alto

CA

94301

IL

Reisfeld; Daniel

Haifa

US-CL-CURRENT: 600/509; 600/512

### ABSTRACT:

The property of cardiac tissue at a local site, a plurality of sites of in a region of a heart may be characterized based on local electrograms measured at the local site, at a plurality of sites or in the region, respectively. The property may be characterized by normalizing the local electrogram, extracting a feature vector from the normalized electrogram, and classifying the tissue property based on the feature vector. The method of may further include computing a map of the tissue property and treating the tissue based on the resultant map. Apparatus to characterize the property includes a catheter and a processor to normalize the local electrogram, extract the feature vector from the electrogram and classify the tissue based on the feature vector.

53 Claims, 17 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 10

Full Title Citation Front Review Classification Date Reference Claims killio Draw Desi

### ☐ 43. Document ID: US 6709858 B1

L12: Entry 43 of 62

File: USPT

Mar 23, 2004

US-PAT-NO: 6709858

DOCUMENT-IDENTIFIER: US 6709858 B1

TITLE: Hyperthermic inducible expression vectors for gene therapy and methods of use thereof

DATE-ISSUED: March 23, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tsang; Tom	Tucson	AZ	211 0000	COUNTRI
Gerner; Eugene W.	Tucson	AZ		
Harris; David T.	Tucson	AZ		
Hersh; Evan	Tucson	AZ		

US-CL-CURRENT: 435/320.1; 424/93.2, 435/455, 435/456, 435/458, 435/69.1, 514/44

#### ABSTRACT:

Methods and compositions are provided for transgene expression in target cells. Expression constructs using an inducible amplification system to drive expression of a therapeutic gene or other gene of interest in mammalian host cells are provided, as well as methods therefor. Inducible expression of the transgenes at high levels under physiologic conditions results from induction by hyperthermic conditions relative to the basal temperature of the host cells.

14 Claims, 10 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 10

Full Title Citation Front	Review Classification	Date Reference		Claims I	SMMC Draw Desi
	1 - 1 - 1 - 1 - 2 - 2 - 2 - 2 - 2 - 2 -				
П 44 В	***		 	***************************************	

### ☐ 44. Document ID: US 6696060 B2

L12: Entry 44 of 62

File: USPT

Feb 24, 2004

US-PAT-NO: 6696060

DOCUMENT-IDENTIFIER: US 6696060 B2

TITLE: Methods for sterilizing preparations of monoclonal immunoglobulins

DATE-ISSUED: February 24, 2004

INVENTOR-INFORMATION:

NAME CITY STATE Grieb; Teri Damascus MD Burgess; Wilson H. Clifton VA Drohan; William N. Springfield VA Forng; Ren-Yo Potomac MD MacPhee; Martin J. Montgomery Village MD Mann; David M. Gaithersburg MD McBain; Anna Derwood MD

US-CL-CURRENT: 424/176.1; 422/21, 422/22, 422/23, 436/548, 530/390.1

#### ABSTRACT:

Methods are disclosed for sterilizing preparation of monoclonal immunoglobulins to reduce the level of active biological contaminants such as viruses, bacteria, yeasts, molds, mycoplasmas, prions and parasites.

ZIP CODE

COUNTRY

Jan 13, 2004

78 Claims, 42 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 42

Full	Title Citation Front Review Classification Date	Reference	Claims	KNMC   Drawn Desc
······		······································	······································	······································
	45. Document ID: US 6676987 B2			
L12:	Entry 45 of 62	File: USPT	Jan	13, 2004

US-PAT-NO: 6676987

DOCUMENT-IDENTIFIER: US 6676987 B2

TITLE: Coating a medical appliance with a bubble jet printing head

DATE-ISSUED: January 13, 2004

#### INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY Zhong; Sheng-ping Northborough MA Boulais; Dennis R. Danielson CTMohan; Kshitij Sudbury MA Austin; Michael Galway ΙE Weber; Jan Galway ΙE

US-CL-CURRENT: 427/2.24; 427/2.1, 427/2.25, 427/2.26, 427/2.28, 427/2.3, 427/2.31, 427/258, 427/261, 427/265, 427/271, 427/272, 427/282, 427/286, 427/287, 427/307, 427/309, 427/402, 427/407.1, 427/409, 427/422, 427/424, 427/8

#### ABSTRACT:

System and method for coating a medical appliance is provided. In accord with one embodiment, a system for applying a coating to a medical appliance having accessible patterned surfaces is provided. This system may include: a processor, a support, and a bubble jet printing head having individual printing nozzles. In this system the support may be adapted to hold the medical appliance and to provide direct access for

a coating to contact the exposed external patterned surfaces of the medical appliance. The bubble jet printing head in this system may move with respect to the medical appliance and may be in communication with a source of coating and with the processor. The processor in this system may contain commands that instruct the bubble jet printing head to force coating onto the accessible patterned surfaces of the medical appliance in a pattern that correlates with the accessible patterned surfaces of the medical appliance.

16 Claims, 7 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 7

Full Title Citation Front Review Classification Date Reference ☐ 46. Document ID: US 6676655 B2 L12: Entry 46 of 62 File: USPT

US-PAT-NO: 6676655

DOCUMENT-IDENTIFIER: US 6676655 B2

TITLE: Low intensity light therapy for the manipulation of fibroblast, and

fibroblast-derived mammalian cells and collagen

DATE-ISSUED: January 13, 2004

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Jan 13, 2004

McDaniel; David H.

Virginia Beach

US-CL-CURRENT: 606/9; 606/3, 606/8, 607/88, 607/90, 607/91

#### ABSTRACT:

Disclosed is a method for treating various dermatalogical conditions using electromagnetic radiation. Particularly preferred are narrowband, multichromatic electromagnetic radiation emitters having a dominant emissive wavelength corresponding to the peak absorption wavelength of the mammalian tissue targetted for treatment. Topical compositions are disclosed for pretreating the targetted tissue to alter the peak absorption wavelength of the tissue.

24 Claims, 39 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 38

Full   Title	Citation Front Review Classification Date Reference
	Document ID: US 6673603 B2

L12: Entry 47 of 62

File: USPT

Jan 6, 2004

US-PAT-NO: 6673603

DOCUMENT-IDENTIFIER: US 6673603 B2

TITLE: Cell paste comprising keratinocytes and fibroblasts

DATE-ISSUED: January 6, 2004

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Baetge; E. Edward St. Sulpice CH
Hunziker; Thomas Oberhofen CH
Limat; Alain Trafers

Ronfard; Vincent Lausanne CH

US-CL-CURRENT: 435/325; 435/366, 435/371

#### ABSTRACT:

The present invention provides the use and composition of matter of angiogenic or other growth factors expressed by combining various types and stages of differentiation of allogeneic human cell strains or lines in unencapsulated pastes (mixed with or applied to extracellular matrix material or synthetic biocompatible substances) to be temporarily applied to wounds or defects in the skin or other tissues for the restoration of blood supplying connective tissue to enable organ-specific cells to reestablish organ integrity as well as to inhibit excessive scar formation.

3 Claims, 5 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 5

Full   Titl	le Citation	Front	Review	Classification	Date Referen	Ce Ce		Claims	KMC	Draw, Desi
	······································	······	······································		·····		······································	······	······································	······································

### ☐ 48. Document ID: US 6663617 B1

L12: Entry 48 of 62

File: USPT

Dec 16, 2003

US-PAT-NO: 6663617

DOCUMENT-IDENTIFIER: US 6663617 B1

TITLE: Devices for creating vascular grafts by vessel distension using fixed post and moveable driver elements

DATE-ISSUED: December 16, 2003

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Vito; Raymond P. N.W. Atlanta GA

Griffis, III; Jack C. Decatur GA

US-CL-CURRENT: 606/1; 600/36, 606/159, 606/194, 623/1.1, 623/903

#### ABSTRACT:

Devices and methods are provided for forming a vascular graft by axially distending a blood vessel to induce growth. The device preferably comprises a stretching mechanism which includes (i) a rigid body; (ii) a pair of posts comprising a first post and a second post which are connected to the body; (iii) a driver element slidably secured

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.13&ref=12&dbname=PGPB,USPT,U... 11/24/04

to the body and disposed between the pair of posts; and (iv) a device for sliding the driver element away from the pair of posts to axially distend a blood vessel positioned between the pair of posts and the driver element. Preferably, the device is implanted, for example using endoscopic techniques, for use in vivo, although the device also can be used in vitro.

33 Claims, 32 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 13

Full Title Crtation Front Review Classification Date Reference Claims NWC Draw Description Date Reference Claims NWC Draw Draw Date Reference Claims NWC D

US-PAT-NO: 6641576

DOCUMENT-IDENTIFIER: US 6641576 B1

TITLE: Devices for creating vascular grafts by vessel distension using rotatable elements

DATE-ISSUED: November 4, 2003

INVENTOR-INFORMATION:

NAME

CITY STATE

COUNTRY

ZIP CODE

Vito; Raymond P.

Atlanta GA

Griffis, III; Jack C.

Decatur GA

US-CL-CURRENT:  $\underline{606/1}$ ;  $\underline{600/36}$ ,  $\underline{606/159}$ ,  $\underline{606/194}$ ,  $\underline{623/1.1}$ ,  $\underline{623/903}$ 

## ABSTRACT:

Devices and methods are provided for forming a vascular graft by axially distending a blood vessel to induce growth. The device preferably comprises a stretching mechanism which includes (i) a stabilization rod, (ii) a pair of rotatable elements, wherein each rotatable element is rotatably attached to the elongated body and has a channel substantially perpendicular to the axis of rotation, and (iii) a means for rotating each rotatable element to axially distend a blood vessel positioned in the channels of the rotatable elements. The elements can be rotated intermittently, cyclically, or continuously, over a period to distend or elongate the donor vessel. Preferably, the device is implanted, for example using endoscopic techniques, for use in vivo, although the device also can be used in vitro.

29 Claims, 35 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 11

Full Title	Citation Front Review Classification Date Reference Claims Kill Draw, Desi
***************************************	
□ 50.	Document ID: US 6633773 B1

L12: Entry 50 of 62

File: USPT

Oct 14, 2003

US-PAT-NO: 6633773

DOCUMENT-IDENTIFIER: US 6633773 B1

TITLE: Area of interest reconstruction for surface of an organ using location data

DATE-ISSUED: October 14, 2003

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Reisfeld; Daniel

Haifa

IL

US-CL-CURRENT: 600/407; 382/128, 600/481

#### ABSTRACT:

A method is provided for generating a three-dimensional reconstruction of a portion of a surface of an organ, and, in particular, a portion of the surface of a chamber of the heart. The reconstruction is generated from location data of a plurality of acquisition points on the organ surface. The method comprises computing a two-dimensional reference plane based on the location data. A function that describes the surface is computed, wherein each point on the surface may be described as a function of the reference plane. The function is then bounded to a constrained region. Tessellation of the function facilitates computer display of the reconstruction. If the location data is accompanied by physiologic property data characteristic of the tissue, the method may be used to generate a reconstruction of the tissue property as a function of the tissue geometry.

39 Claims, 6 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 6

Full Title Citation Front Review Classific	cation Date Reference	Claims KNMC Draw. Desc
☐ 51. Document ID: US 6610269		
L12: Entry 51 of 62	File: USPT	Aug 26, 2003

US-PAT-NO: 6610269

DOCUMENT-IDENTIFIER: US 6610269 B1

TITLE: Contrast agents

DATE-ISSUED: August 26, 2003

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY
Klaveness; Jo Oslo NO
Naevestad; Anne Oslo NO
Tolleshaug; Helge Oslo NO

US-CL-CURRENT: 424/9.1; 424/1.11, 424/1.65, 424/1.69

## ABSTRACT:

The invention provides a composition of matter of the formula (I): V--L--R, where V

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.13&ref=12&dbname=PGPB,USPT,U... 11/24/04

is a vector moiety having affinity for an angiogenesis-related endothelias cell receptor, L is a linker moiety or a bond and R is a detectable moiety, characterized in that V is a non-peptidic organic group, or V is peptidic and R is a macromolecular or particulate species providing a multiplicity of labels detectable in in vivo imaging.

23 Claims, 0 Drawing figures Exemplary Claim Number: 1

Full Title Citation Front Review Classification	Date Reference	Claims KNMC Draw Desc
	·····	
☐ 52. Document ID: US 6602241 B2		
L12: Entry 52 of 62	File: USPT	Aug 5, 2003

US-PAT-NO: 6602241

DOCUMENT-IDENTIFIER: US 6602241 B2

TITLE: Methods and apparatus for acute or chronic delivery of substances or apparatus to extravascular treatment sites

DATE-ISSUED: August 5, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Makower; Joshua	Los Altos	CA		COONTRI
Lamson; Theodore C.	Pleasanton	CA		
Flaherty; J. Christopher	Topsfield	MA		
Reggie; John A.	Palo Alto	CA		
Chang; John Y.	Mountain View	CA		
Catanese, III; Joseph	Redwood City	CA		
Tholfsen; David R.	San Francisco	CA		

US-CL-CURRENT: 604/509; 604/103.01, 604/164.01, 604/164.08

### ABSTRACT:

Methods and apparatus for delivery of substances or apparatus to target sites located outside blood vessels within the body of a human or animal patient. A vessel wall penetrating catheter is inserted into the vasculature, positioned and oriented within a blood vessel near the target extravascular site and a penetrator is advanced from the catheter so as to penetrate outwardly through the wall of the blood vessel in the direction of the target site. Thereafter, a delivery catheter is passed through a lumen of the penetrator to the target site. A desired substance or apparatus is then delivered to or obtained from the target site. In some applications, the penetrator may be retracted into the vessel wall penetrating catheter and the vessel wall penetrating catheter may be removed, leaving the delivery catheter in place for chronic or continuous delivery of substance(s) to and/or obtaining of information or samples from the target site. Alternatively, a delivery catheter having an occlusion member or balloon may be advanced into a vein or venule and the occlusion member or balloon may be used to occlude the lumen of the vein or venule during and after injection of a substance through the catheter, such that the substance will not be carried away by normal venous blood flow and will remain in the vein or venule for a sufficient period of time to have its intended effect (e.g. to enter adjacent tissues through capillary beds drained by that vein or venule).

137 Claims, 22 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 9

Full Title Citation Front Review Classification Date Reference Citation Claims KMMC Draw. Desc

## ☐ 53. Document ID: US 6561968 B1

L12: Entry 53 of 62

File: USPT

May 13, 2003

US-PAT-NO: 6561968

DOCUMENT-IDENTIFIER: US 6561968 B1

TITLE: Method and an apparatus for stimulating/ modulating biochemical processes using pulsed electromagnetic fields

DATE-ISSUED: May 13, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Dissing; Steen	Charlottenlund			DK
Unden; Mogens	Hornbaek			DK
Larsen; Teddy Hebo	Hvidovre			DK
Schou; Soren	Holte			DK
Petersen; Hans Nissen	Lynge			DK

US-CL-CURRENT: 600/13

### ABSTRACT:

A method for stimulating growth in biological tissue or sprouts, an apparatus and a use thereof employs fluctuating magnetic fields. The apparatus includes a pulse generator and a plurality of coils in which pulsed currents will cause fluctuating magnetic fields in a predetermined region holding the material to be stimulated. The fluctuating magnetic fields will induce an electric field in the material. An enhanced effect has been detected in the regions where the electric fields are largest. The coils include a number of pairs of coils having, during a given pulse, magnetic fields in opposite directions in order to provide field gradients in the cells, micro organisms or tissue. Selecting a suitable number, size and positioning of coils will provide a homogeneous electric field in the predetermined region, which does not have any undesirable peaked maxima. When four or more coils are used, they can be combined in pairs arranged on opposite sides of the predetermined region, and with the adjacent coils conducting current in opposite directions and the opposing coils conducting currents in the same direction. Thereby, the induced electrical fields add constructively inside the regions between the pairs of coils. In an apparatus for stimulating cell proliferation and differentiation, it is a desired feature that the generated fluctuations in the magnetic fields do not elicit action potentials of living cells since this will cause great inconvenience for the patient.

49 Claims, 16 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 11

# ☐ 54. Document ID: US 6451044 B1

L12: Entry 54 of 62

File: USPT

Sep 17, 2002

US-PAT-NO: 6451044

DOCUMENT-IDENTIFIER: US 6451044 B1

TITLE: Method and apparatus for heating inflammed tissue

DATE-ISSUED: September 17, 2002

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY Naghavi; Morteza Houston TXGuo; Bujin Houston TXLal; Birendra Houston ΤX Casscells, III; S. Ward Houston TXWillerson; James T. Houston ציד

US-CL-CURRENT: 607/96; 623/1.42

#### ABSTRACT:

The present invention relates to methods for treating inflammation in body tissues. More specifically, certain disclosed methods relate to selectively inducing apoptosis in inflammatory immune cells by heating cells for a sufficient time and at a sufficient temperature to induce programmed cell death. The disclosed stents can be placed in contact with the inflammatory cells and heated under controlled conditions. The disclosed apparatus and methods are particularly suitable for treating athersclerotic plaques.

29 Claims, 13 Drawing figures Exemplary Claim Number: 26 Number of Drawing Sheets: 7

Full	Title	Citation Front Review Classification Date Reference Claims KWMC Draw. Desc	
П	55	Document ID: 1IS 6275624 D1	

## □ 55. Document ID: US 6375634 B1

L12: Entry 55 of 62

File: USPT

Apr 23, 2002

US-PAT-NO: 6375634

DOCUMENT-IDENTIFIER: US 6375634 B1

TITLE: APPARATUS AND METHOD TO ENCAPSULATE, KILL AND REMOVE MALIGNANCIES, INCLUDING SELECTIVELY INCREASING ABSORPTION OF X-RAYS AND INCREASING FREE-RADICAL DAMAGE TO RESIDUAL TUMORS TARGETED BY IONIZING AND NON-IONIZING RADIATION THERAPY

DATE-ISSUED: April 23, 2002

INVENTOR-INFORMATION:

NAME

CITY

STATE ZIP CODE

COUNTRY

Carroll; Robert G.

Largo

FL

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.13&ref=12&dbname=PGPB,USPT,U... 11/24/04

US-CL-CURRENT: 604/19; 604/13, 606/1, 606/41

#### ABSTRACT:

Methods for conducting an operation on a living organism are provided, including methods in which a channel is provided around a tissue of the organism, and an encapsulating composition is infused into the channel to encapsulate the tissue in a capsule. The capsule impedes materials encapsulated therein from migrating to other tissues outside the capsule. Also provided are apparatuses for performing methods of the invention. In addition, an improved method of radiation therapy, in which a locally persistent radiation enhancing agent, such as iron dextran or colloidal chromic phosphate P-32, is administered in or near a tissue to be treated, is provided. The methods and apparatuses are especially useful in the treatment and removal of tumors.

21 Claims, 7 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 2

Full Title Citation Front Review Classification	Date Reference	Claims   KWIC   Draw. Desc
☐ 56. Document ID: US 6353763 B1		
L12: Entry 56 of 62	File: USPT	Mar 5, 2002

US-PAT-NO: 6353763

DOCUMENT-IDENTIFIER: US 6353763 B1

TITLE: Pulsed electromagnetic energy treatment apparatus and method

DATE-ISSUED: March 5, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
George; Frank R.	Scottsdale	AZ		COOMINI
Loya; Arthur A.	Mesa	AZ		
Ritz; Mary C.	Scottsdale	AZ		
Bryant; Robert T.	Tempe	AZ		

US-CL-CURRENT: 607/50; 128/898, 607/154

### ABSTRACT:

A method of and apparatus for the treatment of chronic wounds using pulsed electromagnetic energy provides a constant, known and replicable dosage output which remains unaffected by the capacitance of the patient's body. The apparatus is simple to operate, requiring little operator training or interaction with the apparatus. All specifications of the apparatus relating to the generation and emission of electromagnetic energy are fixed, with the specifications based on actual scientific studies of the various technical parameters involved, such as pulse width and RF dosage. The apparatus includes a pulsed electromagnetic energy generator, a power level controller and one or more thin applicators which can be flexible. The applicators are located immediately adjacent to the patient's body, without the aid of a support member or removal of any dressings or bandages. The generator, which can be battery-operated, is a low power, programmable compact unit whose output is controlled by multiple control circuits for ensuring accurate treatment dosage, for confirming that the treatment was properly administered, and for disabling the

generator when appropriate. The generator output is automatically adjusted in response to instructions from the field strength sensor located on or near the applicator. Multiple applicators selected to operate simultaneously at different treatment dosage levels are connected to the generator by multi-conductor cables and readily located directly on the treatment area. Each applicator is a pad including etched printed circuits. The circuits are matched and pre-tuned. An applicator-topatient proximity detector is also incorporated in or on each applicator and connected to the generator via a power controller to provide for direct monitoring of the treatment site and precise control of treatment dosage.

2 Claims, 15 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 14

Full Title Citation Front Review Classification		
☐ 57. Document ID: US 6334069 B1	anarananananananananananananananananana	mananananananananananananananananananan
L12: Entry 57 of 62	File: NGDT	Day 05 0001

File: USPT

Dec 25, 2001

US-PAT-NO: 6334069

DOCUMENT-IDENTIFIER: US 6334069 B1

\*\* See image for Certificate of Correction \*\*

TITLE: Pulsed electromagnetic energy treatment apparatus and method

DATE-ISSUED: December 25, 2001

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY George; Frank R. Scottsdale AZLoya; Arthur A. Mesa AZ. Ritz; Mary C. Scottsdale AZBryant; Robert T. Tempe AZ

US-CL-CURRENT: 607/2; 607/155, 607/50

## ABSTRACT:

A method of and apparatus for the treatment of chronic wounds using pulsed electromagnetic energy provides a constant, known and replicable dosage output which remains unaffected by the capacitance of the patient's body. The apparatus is simple to operate, requiring little operator training or interaction with the apparatus. All specifications of the apparatus relating to the generation and emission of electromagnetic energy are fixed, with the specifications based on actual scientific studies of the various technical parameters involved, such as pulse width and RF dosage. The apparatus includes a pulsed electromagnetic energy generator, a power level controller and one or more thin applicators which can be flexible. The applicators are located immediately adjacent to the patient's body, without the aid of a support member or removal of any dressings or bandages. The generator, which can be battery-operated, is a low power, programmable compact unit whose output is controlled by multiple control circuits for ensuring accurate treatment dosage, for confirming that the treatment was properly administered, and for disabling the generator when appropriate. The generator output is automatically adjusted in response to instructions from the field strength sensor located on or near the applicator. Multiple applicators selected to operate simultaneously at different treatment dosage levels are connected to the generator by multi-conductor cables and

readily located directly on the treatment area. Each applicator is a pad including etched printed circuits. The circuits are matched and pre-tuned. An applicator-to-patient proximity detector is also incorporated in or on each applicator and connected to the generator via a power controller to provide for direct monitoring of the treatment site and precise control of treatment dosage.

56 Claims, 15 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 14

Full Title Citation Front Review Classification	on Pate Reference	Claims   RMC   Draw Desc
☐ 58. Document ID: US 6329139 E		ananamaanaanaanaanaanaanaanaanaanaanaana
L12: Entry 58 of 62	File: USPT	Dec 11, 2001

US-PAT-NO: 6329139

DOCUMENT-IDENTIFIER: US 6329139 B1

TITLE: Automated sorting system for matrices with memory

DATE-ISSUED: December 11, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE ZIP CODE COUNTRY
Nova; Michael P.	Rancho Santa Fe	
Lillig; John E.	Alamo	CA
Karunaratne; Kanchana Sanjaya Gunesekera	San Diego	CA
Ewing; William	San Diego	CA
Satoda; Yozo	San Diego	CA
Potash; Hanan	Austin	TX

US-CL-CURRENT: 435/6; 209/597, 209/604, 702/19, 702/20

## ABSTRACT:

Automated drug discovery protocols, or partially automated protocols, in which matrices with memories serve as the platform on which all manipulations are performed or serve as the repository of information that is transferred to other memories as the synthesized compounds are processed and screened. Also provided are automated drug discovery units for use in the protocols. The units provide a means for seamless data tracking and include instrumentation and vials with memories for information transfer to other memories in a unit. The units, which are provided herein, include some or all of the following: an automated or manual sorter, microvessels, which contain memories, an automated or semi-automated synthesizer, a microvessel washer/dryer, a manual or automated cleaver for removing compounds from the matrix with memory microvessels, and associated software. The memories may be any of any type, including electromagnetically encodable memories and optical memories, or combinations thereof. The memories may be pre-encoded or may be encodable during, after or before processing. Also provided are manual and automated methods for sorting matrices with memories.

58 Claims, 149 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 79

# ☐ 59. Document ID: US 6264825 B1

L12: Entry 59 of 62

File: USPT

Jul 24, 2001

US-PAT-NO: 6264825

DOCUMENT-IDENTIFIER: US 6264825 B1

TITLE: Binding acceleration techniques for the detection of analytes

DATE-ISSUED: July 24, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP	CODE	COUNTRY
Blackburn; Gary	Glendora	CA		_	0001/11/(1
Creager; Stephen E.	Central	SC			
Fraser; Scott	La Canada	CA			
Irvine; Bruce D.	Glendora	CA			
Meade; Thomas J.	Altadena	CA			
O'Connor; Stephen D.	Pasadena	CA			
Terbrueggen; Robert H.	Manhattan Beach	CA			
Vielmetter; Jost G.	Pasadena	CA			
Welch; Thomas W.	Pasadena	CA			

US-CL-CURRENT: 205/777.5; 204/403.01, 204/409, 204/450, 204/452, 204/600, 204/603

## ABSTRACT:

The invention relates to compositions and methods useful in the acceleration of binding of target analytes to capture ligands on surfaces. Detection proceeds through the use of an electron transfer moiety (ETM) that is associated with the target analyte, either directly or indirectly, to allow electronic detection of the ETM.

29 Claims, 49 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 22

Full	Title	Citation Front Review Classification Date Reference Citation Front Review Claims KWIC Draw. Desc
	***************************************	
		Document ID: US 6174677 B1

L12: Entry 60 of 62

File: USPT

Jan 16, 2001

US-PAT-NO: 6174677

DOCUMENT-IDENTIFIER: US 6174677 B1

TITLE: Advanced surface-enhanced Raman gene probe systems and methods thereof

DATE-ISSUED: January 16, 2001

INVENTOR-INFORMATION:

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.13&ref=12&dbname=PGPB,USPT,U... 11/24/04

NAME

CITY

STATE

ZIP CODE

COUNTRY

Vo-Dinh; Tuan

Knoxville

TN

US-CL-CURRENT: 435/6; 356/301, 435/287.2, 435/287.9, 435/288.7

## ABSTRACT:

The subject invention is a series of methods and systems for using the Surface-Enhanced Raman (SER)-labeled Gene Probe for hybridization, detection and identification of SER-labeled hybridized target oligonucleotide material comprising the steps of immobilizing SER-labeled hybridized target oligonucleotide material on a support means, wherein the SER-labeled hybridized target oligonucleotide material comprise a SER label attached either to a target oligonucleotide of unknown sequence or to a gene probe of known sequence complementary to the target oligonucleotide sequence, the SER label is unique for the target oligonucleotide strands of a particular sequence wherein the SER-labeled oligonucleotide is hybridized to its complementary oligonucleotide strand, then the support means having the SER-labeled hybridized target oligonucleotide material adsorbed thereon is SERS activated with a SERS activating means, then the support means is analyzed.

107 Claims, 20 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 17

Full Title Citation Front Review Classification	n Date Reference	Claims   KMC   Draw, Desc
☐ 61. Document ID: US 6083149 A		
L12: Entry 61 of 62	File: USPT	Jul 4, 2000

US-PAT-NO: 6083149

DOCUMENT-IDENTIFIER: US 6083149 A

TITLE: Magnetic field device and method for inhibiting angiogenesis and retarding growth rates of tumors in mammals

DATE-ISSUED: July 4, 2000

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Wascher; Rick R. Rock Island TN

Williams; C. Douglas Signal Mountain TN
Bouldin; Floyd E. Murfreesboro TN

US-CL-CURRENT: 600/9

### ABSTRACT:

A magnetic field device and method for inhibiting angiogenesis and retarding growth rates of cancerous tumors present in mammals. The apparatus includes a frame, and a wire consisting of electrically conducting material. The wire is wrapped around the frame to form a coil. A source of AC current is connected to a transformer to vary the AC voltage. The AC current is passed through a bridge rectifier and then to the coil of wire enabling a DC rectified wave magnetic field to be produced therefrom. The method employs the use of an apparatus which is capable of producing a magnetic field of a particular nature which has been proven in animal studies to affect

angiogenesis and retard the growth rate of cancerous tumors.

49 Claims, 21 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 11

Full Title Citation Front Review Classification Date Reference Classification Description (Classification Description)

☐ 62. Document ID: US 5948428 A

L12: Entry 62 of 62

File: USPT

Sep 7, 1999

US-PAT-NO: 5948428

DOCUMENT-IDENTIFIER: US 5948428 A

\*\* See image for Certificate of Correction \*\*

TITLE: Compositions and therapeutic methods using morphogenic proteins and stimulatory factors

DATE-ISSUED: September 7, 1999

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Lee; John C.

San Antonio

TX

Yeh; Lee-Chuan C.

San Antonio

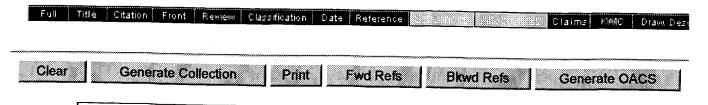
ΤX

US-CL-CURRENT: 424/426; 523/114, 523/115, 530/353

### ABSTRACT:

The present invention provides pharmaceutical compositions comprising a morphogenic protein stimulatory factor (MPSF) for improving the tissue inductive activity of morphogenic proteins, particularly those belonging to the BMP protein family. Methods for improving the tissue inductive activity of a morphogenic protein in a mammal using those compositions are provided. This invention also provides implantable morphogenic devices comprising a morphogenic protein and a MPSF disposed within a carrier, that are capable of inducing tissue formation in allogeneic and xenogeneic implants. Methods for inducing local tissue formation from a progenitor cell in a mammal using those devices are also provided. A method for accelerating allograft repair in a mammal using morphogenic devices is provided. This invention also provides a prosthetic device comprising a prosthesis coated with a morphogenic protein and a MPSF, and a method for promoting in vivo integration of an implantable prosthetic device to enhance the bond strength between the prosthesis and the existing target tissue at the joining site. Methods of treating tissue degenerative conditions in a mammal using the pharmaceutical compositions are also provided.

78 Claims, 17 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 16



Documents
62

Display Format: - Change Format

Previous Page Next Page Go to Doc#







Entrez	PubMed	Nucleotide	Protein	Genome	Structure	OMIM	PMC	Journals	Books
Search P	ubMed	for					Go Cle	ar	
		Limits	Preview	/Index	History		pard	Details	
About Entrez	<u> </u>	<b>Display</b> Abstra	ict	Sh	ow: 20 💌 S	ort -	Send	to Text	_

cells with pre-existing angiotensin II receptors.

Text Version

☐ 1: Biochim Biophys Acta. 1991 Dec 3;1133(1):107-11.

Related Articles, Links

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

Ambroz C, Clark AJ, Catt KJ.

PubMed Services Journals Database MeSH Database Single Citation Matcher Batch Citation Matcher Clinical Queries LinkOut Cubby

Endocrinology and Reproduction Research Branch, National Institute of Child Health and Human Development, National Institute of Health, Bethesda, MD 20892.

The mas oncogene enhances angiotensin-induced [Ca2+]i responses in

Related Resources Order Documents NLM Catalog **NLM Gateway TOXNET** Consumer Health Clinical Alerts ClinicalTrials.gov PubMed Central

The proposal that the mas oncogene is an angiotensin receptor was evaluated in Xenopus oocytes injected with human and rat mas RNA transcripts, and during transient expression of mas in several cell lines. No evidence of mas-induced angiotensin II (AII) receptors or [Ca2+]i responses was observed in Xenopus oocytes or in most of the transfected cells. However, Cos-1 cells, which showed a small endogenous [Ca2+]i response to AII, exhibited a modest but reproducible enhancement of this response after mas transfection. Such responses were inhibited by [Sar1, Ala8]AII and [Sar1, Ile8]AII, but not by [D-Arg1, D-Pro2, D-Trp7,9, Leu11] substance P, an antagonist reported to inhibit mas-induced responses to AII in oocytes. These findings are not compatible with the proposal that the mas oncogene is an angiotensin receptor, but suggest that expression of mas leads to increased responsiveness of the endogenous AII signaling system.

PMID: 1721543 [PubMed - indexed for MEDLINE]

	<u> </u>	
Display Abstract	Show: 20 Sort	Send to Text

Write to the Help Desk NCBI | NLM | NIH Department of Health & Human Services Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50

# **Hit List**

Clear Generate Collection Print Bkwd Refs **Fwd Refs** Generate OACS

## Search Results - Record(s) 1 through 4 of 4 returned.

☐ 1. Document ID: US 20040005297 A1

Using default format because multiple data bases are involved.

L13: Entry 1 of 4

File: PGPB

Jan 8, 2004

PGPUB-DOCUMENT-NUMBER: 20040005297

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040005297 A1

TITLE: Biological scaffold

PUBLICATION-DATE: January 8, 2004

INVENTOR-INFORMATION:

NAME

CITY

STATE

RULE-47

Connelly, Patrick R.

Rochester

NY

COUNTRY

Long Island

Babalola, Omotunde M.

NY US

US

US-CL-CURRENT: <u>424/93.7</u>; <u>424/423</u>, <u>435/366</u>

Full Title Citation Front	Review Classification	Date Reference	Sequences	Attachments	Claims	KWMC - Draw, Desc

☐ 2. Document ID: US 6561968 B1

L13: Entry 2 of 4

File: USPT

May 13, 2003

US-PAT-NO: 6561968

DOCUMENT-IDENTIFIER: US 6561968 B1

TITLE: Method and an apparatus for stimulating/ modulating biochemical processes

Lynge

using pulsed electromagnetic fields

DATE-ISSUED: May 13, 2003

INVENTOR-INFORMATION:

NAME CITY Dissing; Steen Charlottenlund Unden; Mogens Hornbaek

Larsen; Teddy Hebo

Schou; Soren

Petersen; Hans Nissen

STATE ZIP CODE

COUNTRY

DK DK

Hvidovre DK Holte DK

DK

US-CL-CURRENT: 600/13

ABSTRACT:

A method for stimulating growth in biological tissue or sprouts, an apparatus and a use thereof employs fluctuating magnetic fields. The apparatus includes a pulse generator and a plurality of coils in which pulsed currents will cause fluctuating magnetic fields in a predetermined region holding the material to be stimulated. The fluctuating magnetic fields will induce an electric field in the material. An enhanced effect has been detected in the regions where the electric fields are largest. The coils include a number of pairs of coils having, during a given pulse, magnetic fields in opposite directions in order to provide field gradients in the cells, micro organisms or tissue. Selecting a suitable number, size and positioning of coils will provide a homogeneous electric field in the predetermined region, which does not have any undesirable peaked maxima. When four or more coils are used, they can be combined in pairs arranged on opposite sides of the predetermined region, and with the adjacent coils conducting current in opposite directions and the opposing coils conducting currents in the same direction. Thereby, the induced electrical fields add constructively inside the regions between the pairs of coils. In an apparatus for stimulating cell proliferation and differentiation, it is a desired feature that the generated fluctuations in the magnetic fields do not elicit action potentials of living cells since this will cause great inconvenience for the patient.

49 Claims, 16 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 11

Full	Title	Citation	Front	Review	Classification	Date	Reference		Claims	KWIC	Draw, Desc

## ☐ 3. Document ID: US 6083149 A

L13: Entry 3 of 4

File: USPT

Jul 4, 2000

US-PAT-NO: 6083149

DOCUMENT-IDENTIFIER: US 6083149 A

TITLE: Magnetic field device and method for inhibiting angiogenesis and retarding growth rates of tumors in mammals

DATE-ISSUED: July 4, 2000

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Wascher; Rick R. Rock Island TN Williams; C. Douglas Signal Mountain TN

Bouldin; Floyd E. Murfreesboro TN

US-CL-CURRENT: 600/9

### ABSTRACT:

A magnetic field device and method for inhibiting angiogenesis and retarding growth rates of cancerous tumors present in mammals. The apparatus includes a frame, and a wire consisting of electrically conducting material. The wire is wrapped around the frame to form a coil. A source of AC current is connected to a transformer to vary the AC voltage. The AC current is passed through a bridge rectifier and then to the coil of wire enabling a DC rectified wave magnetic field to be produced therefrom. The method employs the use of an apparatus which is capable of producing a magnetic field of a particular nature which has been proven in animal studies to affect angiogenesis and retard the growth rate of cancerous tumors.

49 Claims, 21 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 11

Full Title Citation Front Review Classification Date Reference Communication Claims KMC Draw. Desc

☐ 4. Document ID: US 5948428 A

L13: Entry 4 of 4

File: USPT

Sep 7, 1999

US-PAT-NO: 5948428

DOCUMENT-IDENTIFIER: US 5948428 A

\*\* See image for Certificate of Correction \*\*

TITLE: Compositions and therapeutic methods using morphogenic proteins and stimulatory factors

Sermanacory raccors

DATE-ISSUED: September 7, 1999

INVENTOR-INFORMATION:

NAME

CITY .

STATE

ZIP CODE

COUNTRY

Lee; John C.

San Antonio

TX

Yeh; Lee-Chuan C.

San Antonio

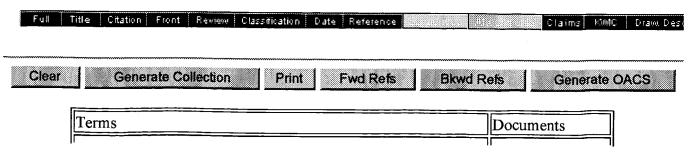
ΤX

US-CL-CURRENT: <u>424/426</u>; <u>523/114</u>, <u>523/115</u>, <u>530/353</u>

### ABSTRACT:

The present invention provides pharmaceutical compositions comprising a morphogenic protein stimulatory factor (MPSF) for improving the tissue inductive activity of morphogenic proteins, particularly those belonging to the BMP protein family. Methods for improving the tissue inductive activity of a morphogenic protein in a mammal using those compositions are provided. This invention also provides implantable morphogenic devices comprising a morphogenic protein and a MPSF disposed within a carrier, that are capable of inducing tissue formation in allogeneic and xenogeneic implants. Methods for inducing local tissue formation from a progenitor cell in a mammal using those devices are also provided. A method for accelerating allograft repair in a mammal using morphogenic devices is provided. This invention also provides a prosthetic device comprising a prosthesis coated with a morphogenic protein and a MPSF, and a method for promoting in vivo integration of an implantable prosthetic device to enhance the bond strength between the prosthesis and the existing target tissue at the joining site. Methods of treating tissue degenerative conditions in a mammal using the pharmaceutical compositions are also provided.

78 Claims, 17 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 16



Display Format: - Change Format

Previous Page

Next Page

Go to Doc#

# Hit List

Clear Generate Collection **Bkwd Refs** Print Fwd Refs **Generate OACS** 

## Search Results - Record(s) 1 through 2 of 2 returned.

☐ 1. Document ID: US 20040005297 A1

Using default format because multiple data bases are involved.

L14: Entry 1 of 2

File: PGPB

Jan 8, 2004

PGPUB-DOCUMENT-NUMBER: 20040005297

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040005297 A1

TITLE: Biological scaffold

PUBLICATION-DATE: January 8, 2004

INVENTOR-INFORMATION:

NAME

CITY

STATE COUNTRY RULE-47

Connelly, Patrick R.

Rochester

NY

US

Babalola, Omotunde M.

Long Island

NY

US

US-CL-CURRENT: 424/93.7; 424/423, 435/366

Full Title Citation Front	Review Classification Date	Reference Sequences	Attachments Claims	: KNAC Draw. Desc
			-	

□ 2. Document ID: US 6561968 B1

L14: Entry 2 of 2

File: USPT

May 13, 2003

DK

US-PAT-NO: 6561968

DOCUMENT-IDENTIFIER: US 6561968 B1

TITLE: Method and an apparatus for stimulating/ modulating biochemical processes

using pulsed electromagnetic fields

DATE-ISSUED: May 13, 2003

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY Dissing; Steen Charlottenlund DK Unden; Mogens Hornbaek DK Larsen; Teddy Hebo Hvidovre DK

Schou; Soren Holte DK Petersen; Hans Nissen Lynge

US-CL-CURRENT: 600/13

ABSTRACT:

A method for stimulating growth in biological tissue or sprouts, an apparatus and a use thereof employs fluctuating magnetic fields. The apparatus includes a pulse generator and a plurality of coils in which pulsed currents will cause fluctuating magnetic fields in a predetermined region holding the material to be stimulated. The fluctuating magnetic fields will induce an electric field in the material. An enhanced effect has been detected in the regions where the electric fields are largest. The coils include a number of pairs of coils having, during a given pulse, magnetic fields in opposite directions in order to provide field gradients in the cells, micro organisms or tissue. Selecting a suitable number, size and positioning of coils will provide a homogeneous electric field in the predetermined region, which does not have any undesirable peaked maxima. When four or more coils are used, they can be combined in pairs arranged on opposite sides of the predetermined region, and with the adjacent coils conducting current in opposite directions and the opposing coils conducting currents in the same direction. Thereby, the induced electrical fields add constructively inside the regions between the pairs of coils. In an apparatus for stimulating cell proliferation and differentiation, it is a desired feature that the generated fluctuations in the magnetic fields do not elicit action potentials of living cells since this will cause great inconvenience for the patient.

49 Claims, 16 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 11

Full Title Citation Front Review	Classification Da	ite Reference		Claims K	MMC - Drawn Desi
	·····				
Clear Generate Collection	Print	Fwd Refs	Bkwd Refs	General	e OACS
Terms			Documents		
(PEMF AND VEGF)					2

Display Format: - Change Format

Previous Page Next Page Go to Doc#

# **Hit List**

Clear Generate Collection Print Fwd Refs Bkwd Refs Generate OACS

## Search Results - Record(s) 1 through 6 of 6 returned.

☐ 1. Document ID: US 20040122494 A1

Using default format because multiple data bases are involved.

L17: Entry 1 of 6

File: PGPB

Jun 24, 2004

PGPUB-DOCUMENT-NUMBER: 20040122494

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040122494 A1

TITLE: System, method and apparatus evaluating tissue temperature

PUBLICATION-DATE: June 24, 2004

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Eggers, Philip E. Dublin ОН US Ridihalgh, John L. Columbus OH US Mayerchak, Mark Bothell WA US Altman, Gary Kirkland WA US

US-CL-CURRENT: 607/103

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWMC	Drawi Desi
***************************************			•••••••		***************************************	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		***************************************		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	***********	<i>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</i>

☐ 2. Document ID: US 20030163177 A1

L17: Entry 2 of 6

File: PGPB

Aug 28, 2003

PGPUB-DOCUMENT-NUMBER: 20030163177

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030163177 A1

TITLE: System method and apparatus for localized heating of tissue

PUBLICATION-DATE: August 28, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47

Eggers, Philip E. Dublin OH US

Ridihalgh, John L. Columbus OH US

US-CL-CURRENT: 607/96; 607/103

ABSTRACT:

System method and apparatus for accurately carrying out the in situ heating of a targeted tissue. Small implants are employed with the targeted tissue which exhibit an abrupt change of magnetic permeability at an elected Curie temperature. The permeability state of the implant is monitored utilizing a magnetometer. The implants may be formed as a setpoint temperature determining component combined with a non-magnetic heater component to enhance the tissue heating control of the system. With the system, a very accurate quantum of heat energy can be supplied to a neoplastic lesion or tissue carrying infectious disease so as to maximize the induction of heat shock proteins. The system also may be utilized in conjunction with non-magnetic arterially implanted stents for the hyperthermia therapy treatment of restenosis and in conjunction with the mending of boney tissue.

Full Title Citation Front Review Classification Date	Reference Sequences Attachments Claims KMC Draw. Desc
☐ 3. Document ID: US 20030139788 A1	
L17: Entry 3 of 6	File: PGPB Jul 24, 2003

PGPUB-DOCUMENT-NUMBER: 20030139788

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030139788 A1

TITLE: System method and apparatus for localized heating of tissue

PUBLICATION-DATE: July 24, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Eggers, Philip E. Dublin OH US Ridihalgh, John L. Columbus OH US

US-CL-CURRENT: 607/96; 607/103

## ABSTRACT:

System method and apparatus for accurately carrying out the in situ heating of a targeted tissue. Small implants are employed with the targeted tissue which exhibit an abrupt change of magnetic permeability at an elected Curie temperature. The permeability state of the implant is monitored utilizing a magnetometer. The implants may be formed as a setpoint temperature determining component combined with a non-magnetic heater component to enhance the tissue heating control of the system. With the system, a very accurate quantum of heat energy can be supplied to a neoplastic lesion or tissue carrying infectious disease so as to maximize the induction of heat shock proteins. The system also may be utilized in conjunction with non-magnetic arterially implanted stents for the hyperthermia therapy treatment of restenosis and in conjunction with the mending of boney tissue.

	Full	Title	Citation Front	Review	Classification Dat	te Reference	Sequences	Attachments	Claims	KOMO	Draw. Desc
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			·····					·····			······································
		4.	Document ID	: US 20	030139787 A1						•

File: PGPB

Jul 24, 2003

PGPUB-DOCUMENT-NUMBER: 20030139787

L17: Entry 4 of 6

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030139787 A1

TITLE: System method and apparatus for localized heating of tissue

PUBLICATION-DATE: July 24, 2003

INVENTOR-INFORMATION:

NAME

CITY

STATE COUNTRY

RULE-47

Eggers, Philip E.

Dublin

ОН

US

Ridihalgh, John L.

Columbus

ОН

US

US-CL-CURRENT: <u>607/96</u>

#### ABSTRACT:

System method and apparatus for accurately carrying out the in situ heating of a targeted tissue. Small implants are employed with the targeted tissue which exhibit an abrupt change of magnetic permeability at an elected Curie temperature. The permeability state of the implant is monitored utilizing a magnetometer. The implants may be formed as a setpoint temperature determining component combined with a non-magnetic heater component to enhance the tissue heating control of the system. With the system, a very accurate quantum of heat energy can be supplied to a neoplastic lesion or tissue carrying infectious disease so as to maximize the induction of heat shock proteins. The system also may be utilized in conjunction with non-magnetic arterially implanted stents for the hyperthermia therapy treatment of restenosis and in conjunction with the mending of boney tissue.

Full	Title	Citation	Front	Review	Classification	Date Reference	Sequences	Attachments	Claims	KWIC	Draw, Desc
		***************************************	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			~~~					

## ☐ 5. Document ID: US 6364824 B1

L17: Entry 5 of 6

File: USPT

Apr 2, 2002

US-PAT-NO: 6364824

DOCUMENT-IDENTIFIER: US 6364824 B1

\*\* See image for Certificate of Correction \*\*

TITLE: Stimulating cell receptor activity using electromagnetic fields

DATE-ISSUED: April 2, 2002

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Fitzsimmons; Robert J.

Mentone

CA

US-CL-CURRENT: 600/13; 600/15

## ABSTRACT:

A method and associated apparatus are presented for stimulating biological activity of cell receptors. The biological activity of cell receptors is stimulated by positioning a transmitter in proximity with the target cell receptors, generating an electromagnetic field, such that the flux of the electromagnetic field extends through the target cell receptors, and fluctuating the electromagnetic field at a predetermined rate of fluctuation. An associated apparatus is presented which

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.18&ref=17&dbname=PGPB,USPT,U... 11/24/04

stimulates biological activity of cell receptors. The apparatus comprises a field coil electrically connected to an alternating current source with a predetermined rate of fluctuation. The alternating current flows through the field coils, thereby generating an electromagnetic field with a predetermined rate of fluctuation.

8 Claims, 11 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 5

Full Title Citation Front Review Classification		
☐ 6. Document ID: US 5656450 A		
L17: Entry 6 of 6	File: USPT	Aug 12, 1997

US-PAT-NO: 5656450

DOCUMENT-IDENTIFIER: US 5656450 A

TITLE: Activation of latent transforming growth factor .beta. by matrix vesicles

DATE-ISSUED: August 12, 1997

## INVENTOR-INFORMATION:

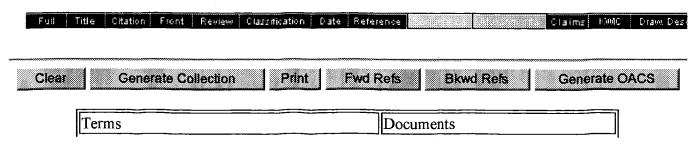
NAME	CITY	STATE	ZIP CODE	COUNTRY
Boyan; Barbara D.	San Antonio	TX		
Schwartz; Zvi	San Antonio	TX		
Bonewald; Lynda F.	San Antonio	TX		

US-CL-CURRENT: 435/68.1; 424/422, 424/548, 424/93.7, 435/173.1, 435/173.8, 435/177, 435/180, 435/182, 435/325, 435/395, 514/21, 530/812, 530/815, 530/817

## ABSTRACT:

A latent growth factor such as transforming growth factor beta (TGF.beta.) is converted to active form by matrix vesicles or an extract from matrix vesicles. The matrix vesicles may be stimulated with a Regulator of Enhancing Factor (REF) such as 1,25-dihydroxy vitamin D (1,25-(OH).sub.2 D.sub.3) or steroid hormones which may be intercalated into the vesicle membrane. The latent growth factor may be activated in culturing cells such as chondrocytes that have been pretreated with 24,25-(OH).sub.2 D.sub.3 to activate cell differentiation, or in healing of bone or cartilage defects, and activation can be carried out in vivo or in vitro. Biodegradable polymeric implants may be prepared containing latent growth factor, REF, matrix vesicle or matrix vesicle extract.

9 Claims, 5 Drawing figures Exemplary Claim Number: 1,6 Number of Drawing Sheets: 3



Display Format: - Change Format

Previous Page

Next Page

Go to Doc#

# Hit List

Clear Generate Collection Print Fwd Refs Bkwd Refs Generate OACS

## **Search Results -** Record(s) 1 through 64 of 64 returned.

☐ 1. Document ID: US 20040197835 A1

Using default format because multiple data bases are involved.

L19: Entry 1 of 64

File: PGPB

Oct 7, 2004

PGPUB-DOCUMENT-NUMBER: 20040197835

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040197835 A1

TITLE: Profiling frequencies of receptor heterodimers

PUBLICATION-DATE: October 7, 2004

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Chan-Hui, Po-Ying Oakland CAUS Shi, Yining San Jose CA US Pidaparthi, Sailaja CA Cupertino US Dua, Rajiv Manteca CA US Singh, Sharat San Jose CA US

US-CL-CURRENT: 435/7.2

Fu∥	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	k001C	Drawi Desi
		**********************	************		***************************************							

☐ 2. Document ID: US 20040133099 A1

L19: Entry 2 of 64

File: PGPB

Jul 8, 2004

PGPUB-DOCUMENT-NUMBER: 20040133099

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040133099 A1

TITLE: Otologic nanotechnology

PUBLICATION-DATE: July 8, 2004

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47

Dyer, R. Kent JR. Edmond OK US Hough, Jack V.D. Oklahoma City OK US

US-CL-CURRENT: 600/420; 424/195.11, 424/400, 424/9.3, 604/20

ABSTRACT:

Diagnosing or treating a human ear includes transporting a conjugated nanoparticle or a magnetically responsive nanoparticle into a human's middle or inner ear. Otologic nanophoresis includes electrically, magnetically or electromagnetically driving a nanoparticle through a membrane of the ear, including a tympanic membrane, a round window membrane, an oval window membrane, or a circulatory membrane. An otologic diagnostic device includes a nanoparticle conjugated with a material selected from the group consisting of lipids, proteins, growth factors, growth hormones, antioxidants, free radical scavengers, steroid preparations, and metabolically active substances; an otologic therapeutic device includes the same categories of substances and chemotherapeutic drugs. Another otologic composition includes a nanoparticle conjugated with a substance perceptible to magnetic resonance imaging.

Full Title Citation Front Review Classification Date	Reference   Sequences   Atta	chments Claims KMC Draw Desc
☐ 3. Document ID: US 20040126818 A1		
L19: Entry 3 of 64	File: PGPB	Jul 1, 2004

PGPUB-DOCUMENT-NUMBER: 20040126818

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040126818 A1

TITLE: Detecting receptor oligomerization

PUBLICATION-DATE: July 1, 2004

#### INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Chan-Hui, Po-Ying	Oakland	CA	US	
Shi, Yining	San Jose	CA	US	
Pidaparthi, Sailaja	Cupertino	CA	US	
Dua, Rajiv	Manteca	CA	US	
Singh, Sharat	San Jose	CA	US	

US-CL-CURRENT: 435/7.2

## ABSTRACT:

Methods are provided for detecting formation of oligomeric complexes of molecules on the surface of cell membranes. These methods employ pairs of tagged probes and cleaving probes, each of which binds specificly to a cell surface molecule. The tagged probe includes a molecular tag that is linked to a first binding compound through a cleavable linkage, and the cleaving probe includes a second binding agent and a cleavage-inducing moiety that can cleave the linkage when within a defined proximity thereto. Binding of the two probes to cell surface molecules that have formed an oligomeric complex results in release of the molecular tag from the binding compound, providing a measure of formation of the complex.

Full Title Citation Front Review Classification	n Date Reference Sequences Att	achments Claims KMC Draw. Desc
☐ 4. Document ID: US 2004012249	94 A1	
L19: Entry 4 of 64	File: PGPB	Jun 24, 2004

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.20&ref=19&dbname=PGPB,USPT,U... 11/24/04

PGPUB-DOCUMENT-NUMBER: 20040122494

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040122494 A1

TITLE: System, method and apparatus evaluating tissue temperature

PUBLICATION-DATE: June 24, 2004

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Eggers, Philip E. Dublin OH US Ridihalgh, John L. Columbus ОН US Mayerchak, Mark Bothell WA US Altman, Gary Kirkland WA US

US-CL-CURRENT: 607/103

#### ABSTRACT:

Method, system and apparatus for monitoring target tissue temperatures wherein temperature sensors are configured as passive resonant circuits each, with a unique resonating signature at monitoring temperatures extending below a select temperature setpoint. The resonant circuits are configured with an inductor component formed of windings about a ferrite core having a Curie temperature characteristic corresponding with a desired temperature setpoint. By selecting inductor winding turns and capacitance values, unique resonant center frequencies are detectable. Temperature monitoring can be carried out with implants at lower threshold and upper limit temperature responses. Additionally, the lower threshold sensors may be combined with auto-regulated heater implants having Curie transitions at upper temperature limits.

Full Title Citation Front Review Classification Date	,	,
☐ 5. Document ID: US 20040005297 A1		and the second s
L19: Entry 5 of 64	File: PGPB	Jan 8, 2004

44457

PGPUB-DOCUMENT-NUMBER: 20040005297

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040005297 A1

TITLE: Biological scaffold

PUBLICATION-DATE: January 8, 2004

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Connelly, Patrick R. Rochester NY US
Babalola, Omotunde M. Long Island NY US

US-CL-CURRENT: 424/93.7; 424/423, 435/366

## ABSTRACT:

A cell-scaffold composition that comprised of a at last five layers biocompatible material, each of which layers is coated with a biological sealant material and

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.20&ref=19&dbname=PGPB,USPT,U... 11/24/04

contains different cells The cell-scaffold composition is located in a bioreactor that contains devices for mechanically stimulating each of the cells in each of the layers at distinct frequencies.

Full Title Citation Front Review Classification Date Reference Sequences Attachments Claims FWIC Draw Desi

☐ 6. Document ID: US 20030171640 A1

L19: Entry 6 of 64

File: PGPB

Sep 11, 2003

PGPUB-DOCUMENT-NUMBER: 20030171640

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030171640 A1

TITLE: Electromagnetic method of treatment of lesions associated with inadequate blood perfusion, partial denervation, tissue loss, pain, edema, inflammation and infection

PUBLICATION-DATE: September 11, 2003

INVENTOR-INFORMATION:

NAME

CITY

STATE

COUNTRY RULE-47

Canedo, Luis

Colonia del Yalle C.P.

ΜX

US-CL-CURRENT: 600/9

#### ABSTRACT:

A method of treating a body lesion associated with inadequate blood perfusion, partial denervation, tissue loss, pain, edema, and/or infection, comprising applying to a subject afflicted with a lesion, externally and non-invasively at a site removed from the lesion, analgesic, angiogenic, vasculogenic, nerve growth, osteogenic, antiedema, anti-inflammation and/or wound repair effective electromagnetic fields (EMFs) comprising frequencies of a few Hertz to less than about 300 Hz and static magnetic field components from a few microTesla to a maximum intensity of about 0.3 to about 0.8 mT. used alone or in combination with a homogeneous static magnetic field of about 40 to about 80 mT or about 400 to about 800 gauss.

Full	Title Citation Front Review Classification Date	Reference Sequences	Attachments   Claim	s KOMC Draw, Desc
	7. Document ID: US 20030170915 A1		esti W	
L19:	Entry 7 of 64	File: PGPB	S	ep 11, 2003

PGPUB-DOCUMENT-NUMBER: 20030170915

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030170915 A1

TITLE: Multiplex analysis using membrane-bound sensitizers

PUBLICATION-DATE: September 11, 2003

INVENTOR-INFORMATION:

NAME CITY

STATE

COUNTRY

RULE-47

Singh, Sharat

San Jose

CA

US

Chan-Hui, Po-Ying

Oakland

CA

US

US-CL-CURRENT: 436/518

## ABSTRACT:

The present invention is directed to methods and compositions for determining the presence, absence, and/or amounts of one or more membrane-associated analytes in a sample. In accordance with the invention, binding compounds derivatized with releasable molecular tags specifically bind to selected membrane-associated analytes, after which the molecular tags are released upon activation of cleavage moieties, or sensitizers, anchored in the same membrane as the membrane-associated analytes. The released molecular tags are then identified by their distinct separation and detection characteristics.

Full Title Citation Front Review Classification Date	Reference Sequences	Attachments Claims KiMC Draw Desi
		,
☐ 8. Document ID: US 20030166831 A1		
L19: Entry 8 of 64	File: PGPB	Sep 4, 2003

PGPUB-DOCUMENT-NUMBER: 20030166831

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030166831 A1

TITLE: Bioerodible conducting materials

PUBLICATION-DATE: September 4, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Shastri, Venkatram Prasad	Lower Gwynedd	PA	US	
Zelikin, Alexander	Moscow	WI	RU	
Lynn, David	Middleton	MA	US	
Langer, Robert S.	Newton		US	
Martin, Ivan	Oberwil		CH	

US-CL-CURRENT: 528/422

### ABSTRACT:

The present invention specifically contemplates a polymer, preferably an electrically conductive polymer, derived from substituted pyrrolyl moieties.

Full	Title Citation Front	Review Classification D	ate Reference	Sequences	Attachments	Claims	KMC	Draw, Desc
		US 20030165482 A						
L19:	Entry 9 of 64		File:	PGPB		Se	p 4,	2003

PGPUB-DOCUMENT-NUMBER: 20030165482

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030165482 A1

TITLE: Methods and compositions for tissue regeneration

PUBLICATION-DATE: September 4, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Rolland, Eric Divonne les bains FR Hunziker, Thomas Oberhofen CH Mis, Beatrice Lausanne CH Rinsch, Christopher Lausanne CH

US-CL-CURRENT: 424/93.21; 424/93.7

#### ABSTRACT:

The present invention provides the use and composition of matter of angiogenic or other growth/cytokine factors expressed by mixtures of allogeneic human cell strains or lines of various types and stages of differentiation. Also provided are unencapsulated preparations (mixed with or applied to extracellular matrix material or synthetic biocompatible substances) for the purpose of temporary application to wounds or defects in the skin or other tissues for the restoration of blood supplying connective tissue to enable organ-specific cells to reestablish organ integrity as well as to inhibit excessive scar formation.

Full	Title	Citation Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KOMIC	Draw, Desi
·········				······································			······································				······································
	10.	Document ID	: US 2	003016317	7 <b>A</b> 1						

File: PGPB

Aug 28, 2003

PGPUB-DOCUMENT-NUMBER: 20030163177

PGPUB-FILING-TYPE: new

L19: Entry 10 of 64

DOCUMENT-IDENTIFIER: US 20030163177 A1

TITLE: System method and apparatus for localized heating of tissue

PUBLICATION-DATE: August 28, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Eggers, Philip E. Dublin OH US

Ridihalgh, John L. Columbus OH US

US-CL-CURRENT: 607/96; 607/103

## ABSTRACT:

System method and apparatus for accurately carrying out the in situ heating of a targeted tissue. Small implants are employed with the targeted tissue which exhibit an abrupt change of magnetic permeability at an elected Curie temperature. The permeability state of the implant is monitored utilizing a magnetometer. The implants

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.20&ref=19&dbname=PGPB,USPT,U... 11/24/04

may be formed as a setpoint temperature determining component combined with a non-magnetic heater component to enhance the tissue heating control of the system. With the system, a very accurate quantum of heat energy can be supplied to a neoplastic lesion or tissue carrying infectious disease so as to maximize the induction of heat shock proteins. The system also may be utilized in conjunction with non-magnetic arterially implanted stents for the hyperthermia therapy treatment of restenosis and in conjunction with the mending of boney tissue.

Full	Title Citation Front Review Classification Date	Reference Sequences	Attachments Claims KMC Draw Desc
		······································	
	11. Document ID: US 20030153965 A1		
L19:	Entry 11 of 64	File: PGPB	Aug 14, 2003

PGPUB-DOCUMENT-NUMBER: 20030153965

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030153965 A1

TITLE: Electrically conducting nanocomposite materials for biomedical applications

PUBLICATION-DATE: August 14, 2003

#### INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Supronowicz, Peter	Trenton	NJ	US	
Bizios, Rena	Troy	NY	US	
Ajayan, Pulickel	Clifton Park	NY	US	
Siegel, Richard	Menands	NY	US	

US-CL-CURRENT: 607/116

## ABSTRACT:

Exposing <u>osteoblasts</u> on an electrically conducting nanocomposite, which may be an orthopaedic/dental implant, to electrical stimulation enhances <u>osteoblast</u> proliferation thereon. The electrically conducting nanoscale material includes an electrically conducting nanoscale material and a biocompatible polymer and/or a biocompatible ceramic; carbon nanotubes may be used as the electrically conducting nanoscale material.

Full Title Citation Front Review Classification Date	Reference Sequences	Attachments Cla	arms KWMC Draw. Desc
		Article (	
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
☐ 12. Document ID: US 20030139788 A1			
L19: Entry 12 of 64	File: PGPB		Jul 24, 2003

PGPUB-DOCUMENT-NUMBER: 20030139788

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030139788 A1

TITLE: System method and apparatus for localized heating of tissue

PUBLICATION-DATE: July 24, 2003

INVENTOR-INFORMATION:

NAME

CITY

STATE

COUNTRY

RULE-47

Eggers, Philip E. Ridihalgh, John L.

Dublin Columbus OH

US

US-CL-CURRENT: 607/96; 607/103

OH

US

### ABSTRACT:

System method and apparatus for accurately carrying out the in situ heating of a targeted tissue. Small implants are employed with the targeted tissue which exhibit an abrupt change of magnetic permeability at an elected Curie temperature. The permeability state of the implant is monitored utilizing a magnetometer. The implants may be formed as a setpoint temperature determining component combined with a nonmagnetic heater component to enhance the tissue heating control of the system. With the system, a very accurate quantum of heat energy can be supplied to a neoplastic lesion or tissue carrying infectious disease so as to maximize the induction of heat shock proteins. The system also may be utilized in conjunction with non-magnetic. arterially implanted stents for the hyperthermia therapy treatment of restenosis and in conjunction with the mending of boney tissue.

					KMMC - Draw Desc

☐ 13. Document ID: US 20030139787 A1

L19: Entry 13 of 64

File: PGPB

Jul 24, 2003

PGPUB-DOCUMENT-NUMBER: 20030139787

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030139787 A1

TITLE: System method and apparatus for localized heating of tissue

PUBLICATION-DATE: July 24, 2003

INVENTOR-INFORMATION:

NAME

CITY

STATE

COUNTRY

RULE-47

Eggers, Philip E.

Dublin

OH

US

Ridihalgh, John L.

Columbus

OH

US

US-CL-CURRENT: 607/96

## ABSTRACT:

System method and apparatus for accurately carrying out the in situ heating of a targeted tissue. Small implants are employed with the targeted tissue which exhibit an abrupt change of magnetic permeability at an elected Curie temperature. The permeability state of the implant is monitored utilizing a magnetometer. The implants may be formed as a setpoint temperature determining component combined with a nonmagnetic heater component to enhance the tissue heating control of the system. With the system, a very accurate quantum of heat energy can be supplied to a neoplastic lesion or tissue carrying infectious disease so as to maximize the induction of heat shock proteins. The system also may be utilized in conjunction with non-magnetic arterially implanted stents for the hyperthermia therapy treatment of restenosis and in conjunction with the mending of boney tissue.

☐ 14. Document ID: US 20030113832 A1

L19: Entry 14 of 64

File: PGPB

Jun 19, 2003

PGPUB-DOCUMENT-NUMBER: 20030113832

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030113832 A1

TITLE: Apparatus and method for assaying electrophysiological effects

PUBLICATION-DATE: June 19, 2003

INVENTOR-INFORMATION:

NAME

CITY

STATE

COUNTRY

Lauf, Robert J.

Oak Ridge

TN

RULE-47

US-CL-CURRENT: 435/29; 435/287.1

### ABSTRACT:

A culture vessel for biological samples contains a plurality of individually addressable electrodes and a means of maintaining these electrodes at various potentials, whereby cells may be cultured in a wide variety of electric fields to rapidly assess the influence of field strength, frequency, or waveform on cell growth or inhibition, platelet adhesion, gene expression, or other responses of interest while maintaining an otherwise uniform culture environment for the cells. The electrode array may be formed on a rigid, reusable substrate or it may be disposable.

		Classification		Attachments		Drawi Desc

☐ 15. Document ID: US 20030109040 A1

L19: Entry 15 of 64

File: PGPB

Jun 12, 2003

PGPUB-DOCUMENT-NUMBER: 20030109040

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030109040 A1

TITLE: Optical cell guidance method and apparatus

PUBLICATION-DATE: June 12, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Kas, Josef	Leipzig	TX	DE	
Raizen, Mark	Austin	NJ	US	
Milner, Valery	Basking Ridge		US	
Betz, Timo	Leipzig		DE	
Ehrlicher, Allen	Leipzig		DE	

US-CL-CURRENT: 435/368; 435/287.1

#### ABSTRACT:

Embodiments of the invention include Optical Cell Guidance (OCG) methods and apparatus to control cell growth. This system guides the leading edge of motile cells with an optical gradient, which biases the cell's motion into the light by pulling on proteins, which act like soft dielectrics in the <u>electromagnetic field</u>. OCG differs from those devices described above in that it controls the direction of cell motility. This is an entirely new field, and the first device to directly manipulate cell motility. OCG differs from current approaches in that it does not trap or hold particles. Instead of trapping and pulling the cell, the goal of OCG is to influence, direct, and control the growth of a growth cone.

Full	Title Citatio	n Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KOMO	Draw, Desi
											. <del>.</del>
				***************************************		***************************************				·····	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	16. Docu	ment ID:	US 2	003010402	9 <b>A</b> 1						
L19:	Entry 16	of 64				File:	PGPB		Jui	n 5,	2003

PGPUB-DOCUMENT-NUMBER: 20030104029

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030104029 A1

TITLE: Resorbable polymer composition, implant and method of making implant

PUBLICATION-DATE: June 5, 2003

### INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Pirhonen, Eija	Tampere		FI	
Nieuwenhuis, Jan	Gorinchem		NL	
Kaikkonen, Auvo	Tampere		FI	
Nieminen, Tuomo	Tampere		FI	
Weber, Franz	Singen		DE	

US-CL-CURRENT: 424/426; 514/424

## ABSTRACT:

Novel polymer compositions that are useful in the manufacture of medical implants, implants having osteogenic properties and methods of making said implants are disclosed. Polymer compositions comprise a base material including a polymer matrix of resorbable polymer(s) or copolymer(s), and N-methyl-2-pyrrolidone (NMP), wherein NMP is present in an amount imparting osteogenic properties for the composition.

Full Title Citation Front Review Classification Date	Reference Sequences A	ttachments Claims KWMC Draw. Desc
☐ 17. Document ID: US 20030068634 A1		······································
L19: Entry 17 of 64	File: PGPB	Apr 10, 2003

PGPUB-DOCUMENT-NUMBER: 20030068634

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030068634 A1

TITLE: Methods for screening cellular proliferation using isotope labels

PUBLICATION-DATE: April 10, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47

Hellerstein, Marc K. Kensington CA US

US-CL-CURRENT: 435/6; 536/24.3

#### ABSTRACT:

The present invention relates to methods for measuring the proliferation and destruction rates of cells by measuring deoxyribonucleic acid (DNA) synthesis and/or destruction. In particular, the methods utilize non-radioactive stable isotope labels to endogenously label DNA synthesized through the de novo nucleotide synthesis pathway in a cell. The amount of label incorporated in the DNA is measured as an indication of cellular proliferation. The decay of labeled DNA over time is measured as an indication of cellular destruction. Such methods do not involve radioactivity or potentially toxic metabolites, and are suitable for use both in vitro and in vivo. Therefore, the invention is useful for measuring cellular proliferation or cellular destruction rates in humans for the diagnosis, prevention, or management of a variety of disease conditions in which cellular proliferation or cellular destruction is involved. The invention also provides methods for measuring proliferation or destruction of T cells in a subject infected with human immunodeficiency virus (HIV) and methods of screening an agent for a capacity to induce or inhibit cellular proliferation or destruction. In addition, the invention provides methods for measuring cellular proliferation in a proliferating population which utilize both radioactive isotope labels and stable isotopes to endogenously label DNA through the de novo nucleotide synthesis pathway.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWC	Draw, Desi
·····	······································	·····					••••••	***************************************	***************************************	•	·····	
	18.	Docume	ent ID:	US 20	003006698	7 <b>A</b> 1						
L19:	Entr	y 18 of	64				File:	PGPB		Apr	10,	2003

PGPUB-DOCUMENT-NUMBER: 20030066987

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030066987 A1

TITLE: Biodegradable, electrically conducting polymer for tissue engineering

applications

PUBLICATION-DATE: April 10, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47

Schmidt, Christine E. Austin TX US

Rivers, Tyrell J. Elkins Park PA US

US-CL-CURRENT: <u>252/500</u>

#### ABSTRACT:

The subject matter of the present invention includes a novel biodegradable conducting polymer for biomedical applications. The polymer combines mixed heteroaromatic conductive segments of pyrrole and thiophene with flexible aliphatic chains via degradable ester linkages. In addition to its utility for peripheral nerve regeneration, the polymer may be applied to other areas of tissue engineering, including spinal cord regeneration, wound healing, bone repair, muscle tissue stimulation, and other regenerative, restorative, reconstructive, therapeutic, prophylactic, and diagnostic functions.

Full Title Citation Front Review Classification Date	Reference Sequences	Attachments Claims	kWWC   Draww Desc
☐ 19. Document ID: US 20030059764 A1			
L19: Entry 19 of 64	File: PGPB	Mar	27, 2003

PGPUB-DOCUMENT-NUMBER: 20030059764

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030059764 A1

TITLE: Multiplexed cell analysis system

PUBLICATION-DATE: March 27, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY RULE-47
Ravkin, Ilya	Palo Alto	CA	US
Goldbard, Simon	San Jose	CA	US
Hyun, William C.	San Francisco	CA	US
Zarowitz, Michael A.	San Carlos	CA	US
Beske, Oren E.	Belmont	CA	US

US-CL-CURRENT: 435/4; 435/7.21

### ABSTRACT:

Systems including apparatus, methods, compositions, and kits for multiplexed analysis of biological systems using nonpositional and/or positional arrays of coded carriers.

Full	Title Citation Front F	ewiew Classification Dat	e Reference	Sequences	Attachments	Claims	F304C	Draw Des	1-2-2-
		US 20030057947 A				•••••			e
L19: E	ntrv 20 of 64		File:	PGPB		Mar	27.	2003	

PGPUB-DOCUMENT-NUMBER: 20030057947

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030057947 A1

TITLE: Nuclear magnetic resonance technology for non-invasive characterization of bone porosity and pore size distributions

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.20&ref=19&dbname=PGPB,USPT,U... 11/24/04

PUBLICATION-DATE: March 27, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47
Ni, Qingwen San Antonio TX US
Wang, Xiaodu San Antonio TX US

San Antonio

US-CL-CURRENT: <u>324/309</u>; <u>324/303</u>, 324/307

#### ABSTRACT:

King, James D.

Magnetic resonance technology can be used to non-invasively measure bone porosity, pore size distribution, and other bone properties, including aging, in situ. Spin-lattice (T.sub.1) as well as spin-spin (T.sub.2) relaxation time data and spectra are used to determine porosity and pore size distribution in human bones, including compact bones.

TX

US

Full Title Citation Front Review Classification	Date Reference Sequences Attac	chments Claims KMC Draw Desi
☐ 21. Document ID: US 2002004856	3 A1	
L19: Entry 21 of 64	File: PGPB	Apr 25, 2002

PGPUB-DOCUMENT-NUMBER: 20020048563

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020048563 A1

TITLE: Methods and compositions for tissue regeneration

PUBLICATION-DATE: April 25, 2002

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47
Baetge, E. Edward St Sulpice CH
Hunziker, Thomas Oberhofen CH
Ronfard, Vincent Lausanne CH

US-CL-CURRENT: <u>424/93.7</u>; 435/366, 435/368

## ABSTRACT:

The present invention provides the use and composition of matter of angiogenic or other growth factors expressed by combining various types and stages of differentiation of allogeneic human cell strains or lines in unencapsulated pastes (mixed with or applied to extracellular matrix material or synthetic biocompatible substances) to be temporarily applied to wounds or defects in the skin or other tissues for the restoration of blood supplying connective tissue to enable organ-specific cells to reestablish organ integrity as well as to inhibit excessive scar formation.

Fuil	Title Citation	Front Review	Classification Date	Reference Sequences	Attachments Clair	ms killio Draw Desi

## ☐ 22. Document ID: US 20020048531 A1

L19: Entry 22 of 64

File: PGPB

Apr 25, 2002

Jan 24, 2002

PGPUB-DOCUMENT-NUMBER: 20020048531

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020048531 A1

TITLE: Deposited thin films and their use in detection, attachment, and bio-medical

applications

PUBLICATION-DATE: April 25, 2002

#### INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Fonash, Stephen J.	State College	PA	US	
Bae, Sanghoon	State College	PA	US	
Hayes, Daniel J.	State College	PA	US	
Cuiffi, Joseph	State College	PA	US	

US-CL-CURRENT:  $\underline{422}/\underline{68.1}$ ;  $\underline{204}/\underline{451}$ ,  $\underline{204}/\underline{601}$ ,  $\underline{422}/\underline{81}$ ,  $\underline{436}/\underline{180}$ ,  $\underline{436}/\underline{54}$ ,  $\underline{73}/\underline{864.11}$ 

#### ABSTRACT:

The present invention is directed to the use of deposited thin films for chemical or biological analysis. The invention further relates to the use of these thin films in separation adherence and detection of chemical of biological samples. Applications of these thin films include desorption-ionization mass spectroscopy, electrical contacts for organic thin films and molecules, optical coupling of light energy for analysis, biological materials manipulation, chromatographic separation, head space adsorbance media, media for atomic molecular adsorbance or attachment, and substrates for cell attachment.

Full	Title	Citation Fro	ont Review	Classification	Date	Reference	Sequences	Attachments	Claims	K0000	Draw Des
	23.	Document	t ID: US 2	2002000979	7 <b>A</b> 1				***************************************	***************************************	

File: PGPB

PGPUB-DOCUMENT-NUMBER: 20020009797

PGPUB-FILING-TYPE: new

L19: Entry 23 of 64

DOCUMENT-IDENTIFIER: US 20020009797 A1

TITLE: Growth stimulation of biological cells and tissue by electromagnetic fields

and uses thereof

PUBLICATION-DATE: January 24, 2002

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Wolf, David A. Houston TX US
Goodwin, Thomas J. Friendswood TX US

US-CL-CURRENT: 435/289.1; 435/173.8, 435/298.2

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.20&ref=19&dbname=PGPB,USPT,U... 11/24/04

#### ABSTRACT:

The present invention provides systems for growing two or three dimensional mammalian cells within a culture medium facilitated by an electromagnetic field, and preferably, a time varying electromagnetic field. The cells and culture medium are contained within a fixed or rotating culture vessel, and the electromagnetic field is emitted from at least one electrode. In one embodiment, the electrode is spaced from the vessel. The invention further provides methods to promote neural tissue regeneration by means of culturing the neural cells in the claimed system. In one embodiment, neuronal cells are grown within longitudinally extending tissue strands extending axially along and within electrodes comprising electrically conductive channels or guides through which a time varying electrical current is conducted, the conductive channels being positioned within a culture medium.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KOMC	Drawi Desi
	nannanna M	****************			***************************************	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		***************************************				
	24.	Docum	ent ID	: US 6	808875 B2	2						

File: USPT

Oct 26, 2004

US-PAT-NO: 6808875

L19: Entry 24 of 64

DOCUMENT-IDENTIFIER: US 6808875 B2

TITLE: Methods for screening cellular proliferation using isotope labels

DATE-ISSUED: October 26, 2004

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Hellerstein; Marc K. Kensington CA

US-CL-CURRENT: 435/4; 435/29

## ABSTRACT:

The present invention relates to methods for measuring the proliferation and destruction rates of cells by measuring deoxyribonucleic acid (DNA) synthesis and/or destruction. In particular, the methods utilize non-radioactive stable isotope labels to endogenously label DNA synthesized through the de novo nucleotide synthesis pathway in a cell. The amount of label incorporated in the DNA is measured as an indication of cellular proliferation. The decay of labeled DNA over time is measured as an indication of cellular destruction. Such methods do not involve radioactivity or potentially toxic metabolites, and are suitable for use both in vitro and in vivo. Therefore, the invention is useful for measuring cellular proliferation or cellular destruction rates in humans for the diagnosis, prevention, or management of a variety of disease conditions in which cellular proliferation or cellular destruction is involved. The invention also provides methods for measuring proliferation or destruction of T cells in a subject infected with human immunodeficiency virus (HIV) and methods of screening an agent for a capacity to induce or inhibit cellular proliferation or destruction. In addition, the invention provides methods for measuring cellular proliferation in a proliferating population which utilize both radioactive isotope labels and stable isotopes to endogenously label DNA through the de novo nucleotide synthesis pathway.

16 Claims, 28 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 17

☐ 25. Document ID: US 6794196 B2

L19: Entry 25 of 64

File: USPT

Sep 21, 2004

US-PAT-NO: 6794196

DOCUMENT-IDENTIFIER: US 6794196 B2

TITLE: Deposited thin films and their use in detection, attachment and bio-medical

applications

DATE-ISSUED: September 21, 2004

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Fonash; Stephen J. State College PA

Bae; Sanghoon State College PA Hayes; Daniel J. State College PA

Cuiffi; Joseph State College PA

US-CL-CURRENT: 436/174; 435/287.1, 435/287.8, 436/149, 436/151

#### ABSTRACT:

The present invention is directed to the use of deposited thin films for chemical or biological analysis. The invention further relates to the use of these thin films in separation adherence and detection of chemical of biological samples. Applications of these thin films include desorption-ionization mass spectroscopy, electrical contacts for organic thin films and molecules, optical coupling of light energy for analysis, biological materials manipulation, chromatographic separation, head space adsorbance media, media for atomic molecular adsorbance or attachment, and substrates for cell attachment.

19 Claims, 25 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 25

Full	Title	Citation		Classification		Reference			Claims	KOMC	Drawt Desc
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	***************************************	 	······	***************************************	***************************************	······			

☐ 26. Document ID: US 6733435 B2

L19: Entry 26 of 64

File: USPT

May 11, 2004

US-PAT-NO: 6733435

DOCUMENT-IDENTIFIER: US 6733435 B2

\*\* See image for <u>Certificate of Correction</u> \*\*

TITLE: Electromagnetic method of treatment of lesions associated with inadequate blood perfusion, partial denervation, tissue loss, pain, edema, inflammation and infection

DATE-ISSUED: May 11, 2004

INVENTOR-INFORMATION:

NAME

CITY

STATE ZIP CODE

COUNTRY

Canedo; Luis

Colonia del Yalle C.P. 03001

ΜX

US-CL-CURRENT: 600/9

#### ABSTRACT:

A method of treating a body lesion associated with inadequate blood perfusion, partial denervation, tissue loss, pain, edema, and/or infection, comprising applying to a subject afflicted with a lesion, externally and non-invasively at a site removed from the lesion, analgesic, angiogenic, vasculogenic, nerve growth, osteogenic, antiedema, anti-inflammation and/or wound repair effective electromagnetic fields (EMFs) comprising frequencies of a few Hertz to less than about 300 Hz and static magnetic field components from a few microTesla to a maximum intensity of about 0.3 to about 0.8 mT. used alone or in combination with a homogeneous static magnetic field of about 40 to about 80 mT or about 400 to about 800 gauss.

66 Claims, 29 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 16

Full Title Citation Front	Review Classification Date	Claims KMC Draw Desc

☐ 27. Document ID: US 6696575 B2

L19: Entry 27 of 64

File: USPT

Feb 24, 2004

US-PAT-NO: 6696575

DOCUMENT-IDENTIFIER: US 6696575 B2

TITLE: Biodegradable, electrically conducting polymer for tissue engineering

applications

DATE-ISSUED: February 24, 2004

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Schmidt; Christine E.

Austin

TX

Rivers; Tyrell J.

Elkins Park

PA

US-CL-CURRENT: 548/524; 252/500

## ABSTRACT:

The subject matter of the present invention includes a novel biodegradable conducting polymer for biomedical applications. The polymer combines mixed heteroaromatic conductive segments of pyrrole and thiophene with flexible aliphatic chains via degradable ester linkages. In addition to its utility for peripheral nerve regeneration, the polymer may be applied to other areas of tissue engineering, including spinal cord regeneration, wound healing, bone repair, muscle tissue stimulation, and other regenerative, restorative, reconstructive, therapeutic, prophylactic, and diagnostic functions.

39 Claims, 7 Drawing figures Exemplary Claim Number: 1

☐ 28. Document ID: US 6690166 B2

L19: Entry 28 of 64

File: USPT

Feb 10, 2004

US-PAT-NO: 6690166

DOCUMENT-IDENTIFIER: US 6690166 B2

TITLE: Nuclear magnetic resonance technology for non-invasive characterization of

bone porosity and pore size distributions

DATE-ISSUED: February 10, 2004

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Ni; Qingwen San Antonio TXWang; Xiaodu San Antonio TXKing; James D. San Antonio TX

US-CL-CURRENT: 324/309; 324/307, 324/318

#### ABSTRACT:

Magnetic resonance technology can be used to non-invasively measure bone porosity, pore size distribution, and other bone properties, including aging, in situ. Spinlattice (T.sub.1) as well as spin-spin (T.sub.2) relaxation time data and spectra are used to determine porosity and pore size distribution in human bones, including compact bones.

24 Claims, 11 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 6

Full	Title	Front	Review	Classification	Date	Reference		Claims	K004C	Draw Desc

☐ 29. Document ID: US 6673603 B2

L19: Entry 29 of 64

File: USPT

Jan 6, 2004

US-PAT-NO: 6673603

DOCUMENT-IDENTIFIER: US 6673603 B2

TITLE: Cell paste comprising keratinocytes and fibroblasts

DATE-ISSUED: January 6, 2004

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Baetge; E. Edward St. Sulpice CH Hunziker; Thomas

Oberhofen

Limat; Alain

Trafers

CH

CH

Ronfard; Vincent

Lausanne

CH

US-CL-CURRENT: 435/325; 435/366, 435/371

#### ABSTRACT:

The present invention provides the use and composition of matter of angiogenic or other growth factors expressed by combining various types and stages of differentiation of allogeneic human cell strains or lines in unencapsulated pastes (mixed with or applied to extracellular matrix material or synthetic biocompatible substances) to be temporarily applied to wounds or defects in the skin or other tissues for the restoration of blood supplying connective tissue to enable organspecific cells to reestablish organ integrity as well as to inhibit excessive scar formation.

3 Claims, 5 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 5

Full Title Citation Front Review Classificat	tion Date Reference	Claims   KMC   Draw. Desc
☐ 30. Document ID: US 6673597	B2	
L19: Entry 30 of 64	File: USPT	Jan 6, 2004

US-PAT-NO: 6673597

DOCUMENT-IDENTIFIER: US 6673597 B2

TITLE: Growth stimulation of biological cells and tissue by electromagnetic fields and uses thereof

DATE-ISSUED: January 6, 2004

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE COUNTRY

Wolf; David A.

Houston

TX

Goodwin; Thomas J.

Friendswood

TX

US-CL-CURRENT: <u>435/298.2</u>; <u>435/299.1</u>

#### ABSTRACT:

The present invention provides systems for growing two or three dimensional mammalian cells within a culture medium facilitated by an electromagnetic field, and preferably, a time varying electromagnetic field. The cells and culture medium are contained within a fixed or rotating culture vessel, and the electromagnetic field is emitted from at least one electrode. In one embodiment, the electrode is spaced from the vessel. The invention further provides methods to promote neural tissue regeneration by means of culturing the neural cells in the claimed system. In one embodiment, neuronal cells are grown within longitudinally extending tissue strands extending axially along and within electrodes comprising electrically conductive channels or guides through which a time varying electrical current is conducted, the conductive channels being positioned within a culture medium.

25 Claims, 12 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 11

☐ 31. Document ID: US 6669623 B1

L19: Entry 31 of 64

File: USPT

Dec 30, 2003

US-PAT-NO: 6669623

DOCUMENT-IDENTIFIER: US 6669623 B1

TITLE: Medical preparation for treating arthrosis, arthritis and other rheumatic

joint diseases

DATE-ISSUED: December 30, 2003

INVENTOR-INFORMATION:

NAME

CITY

STATE ZIP CODE

COUNTRY

Jordan; Andreas

Berlin

DE

US-CL-CURRENT:  $\underline{600/9}$ ;  $\underline{424/1.11}$ ,  $\underline{424/1.33}$ ,  $\underline{424/178.1}$ ,  $\underline{514/825}$ 

#### ABSTRACT:

A medical preparation for treating arthrosis, arthritis and other rheumatic joint diseases comprises a suspension consisting of one-shelled or multi-shelled nanoscalar particles composed of a core containing iron oxide and of an inner shell with groups capable of forming cationic groups or, optionally, of at least one outer shell with neutral and/or anionic groups. Radionuclides and substances, said substances being cytotoxically active when subjected to heat, are bound to the inner shell. The preparation that is injected into the joint cavity and subjected to an alternating electromagnetic field promises an excellent treatment outcome due to the high rate of phagocytosis and the trimodal combinatorial effect of thermotherapy, radiotherapy and chemotherapy.

9 Claims, 0 Drawing figures Exemplary Claim Number: 1

Full	Title	Citation	Front	Review Classification	Date	Reference		Claims	KOMO	Draw, Desc
	•			•		·		•		

## ☐ 32. Document ID: US 6561968 B1

L19: Entry 32 of 64

File: USPT

May 13, 2003

US-PAT-NO: 6561968

DOCUMENT-IDENTIFIER: US 6561968 B1

TITLE: Method and an apparatus for stimulating/ modulating biochemical processes using  $\underline{\text{pulsed electromagnetic fields}}$ 

DATE-ISSUED: May 13, 2003

INVENTOR-INFORMATION: NAME CITY STATE ZIP CODE COUNTRY Dissing; Steen Charlottenlund DK Unden; Mogens Hornbaek DK Larsen; Teddy Hebo Hvidovre DK Schou; Soren Holte DK Petersen; Hans Nissen Lynge DK

US-CL-CURRENT: 600/13

#### ABSTRACT:

A method for stimulating growth in biological tissue or sprouts, an apparatus and a use thereof employs fluctuating magnetic fields. The apparatus includes a pulse generator and a plurality of coils in which pulsed currents will cause fluctuating magnetic fields in a predetermined region holding the material to be stimulated. The fluctuating magnetic fields will induce an electric field in the material. An enhanced effect has been detected in the regions where the electric fields are largest. The coils include a number of pairs of coils having, during a given pulse, magnetic fields in opposite directions in order to provide field gradients in the cells, micro organisms or tissue. Selecting a suitable number, size and positioning of coils will provide a homogeneous electric field in the predetermined region, which does not have any undesirable peaked maxima. When four or more coils are used, they can be combined in pairs arranged on opposite sides of the predetermined region, and with the adjacent coils conducting current in opposite directions and the opposing coils conducting currents in the same direction. Thereby, the induced electrical fields add constructively inside the regions between the pairs of coils. In an apparatus for stimulating cell proliferation and differentiation, it is a desired feature that the generated fluctuations in the magnetic fields do not elicit action potentials of living cells since this will cause great inconvenience for the patient.

49 Claims, 16 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 11

Full Title Citation Front Review Classification	Date Reference	Claims   KMMC   Draw Desc
☐ 33. Document ID: US 6485963 B1		
L19: Entry 33 of 64	File: USPT	Nov 26, 2002

US-PAT-NO: 6485963

DOCUMENT-IDENTIFIER: US 6485963 B1

TITLE: Growth stimulation of biological cells and tissue by  $\frac{\text{electromagnetic fields}}{\text{and uses thereof}}$ 

DATE-ISSUED: November 26, 2002

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY Wolf; David A. Houston TX

Goodwin; Thomas J. Friendswood TX

US-CL-CURRENT: 435/298.2; 435/299.1

#### ABSTRACT:

The present invention provides systems for growing two or three dimensional mammalian cells within a culture medium facilitated by an electromagnetic field, and preferably, a time varying electromagnetic field. The cells and culture medium are contained within a fixed or rotating culture vessel, and the electromagnetic field is emitted from at least one electrode. In one embodiment, the electrode is spaced from the vessel. The invention further provides methods to promote neural tissue regeneration by means of culturing the neural cells in the claimed system. In one embodiment, neuronal cells are grown within longitudinally extending tissue strands extending axially along and within electrodes comprising electrically conductive channels or guides through which a time varying electrical current is conducted, the conductive channels being positioned within a culture medium.

18 Claims, 12 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 11

Full Title Citation Front Review Classificat	tion Date Reference	Claims KMC Draw, Desc
☐ 34. Document ID: US 6461806		
L19: Entry 34 of 64	File: USPT	Oct 8, 2002

Oct 8, 2002

US-PAT-NO: 6461806

DOCUMENT-IDENTIFIER: US 6461806 B1

TITLE: Methods for measuring cellular proliferation and destruction rates in vitro

and in vivo

DATE-ISSUED: October 8, 2002

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Hellerstein; Marc K. Kensington CA

US-CL-CURRENT: 435/4; 435/29

#### ABSTRACT:

The present invention relates to methods for measuring the proliferation and destruction rates of cells by measuring deoxyribonucleic acid (DNA) synthesis and/or destruction. In particular, the methods utilize non-radioactive stable isotope labels to endogenously label DNA synthesized through the de novo nucleotide synthesis pathway in a cell. The amount of label incorporated in the DNA is measured as an indication of cellular proliferation. The decay of labeled DNA over time is measured as an indication of cellular destruction. Such methods do not involve radioactivity or potentially toxic metabolites, and are suitable for use both in vitro and in vivo. Therefore, the invention is useful for measuring cellular proliferation or cellular destruction rates in humans for the diagnosis, prevention, or management of a variety of disease conditions in which cellular proliferation or cellular destruction is involved. The invention also provides methods for measuring proliferation or destruction of T cells in a subject infected with human immunodeficiency virus (HIV) and methods of screening an agent for a capacity to induce or inhibit cellular proliferation or destruction. In addition, the invention provides methods for measuring cellular proliferation in a proliferating population which utilize both radioactive isotope labels and stable isotopes to endogenously label DNA through the de novo nucleotide synthesis pathway.

17 Claims, 25 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 17

Full Title Citation Front Review Classification Date Reference Citation Claims KWIC Draw. Desc

☐ 35. Document ID: US 6443883 B1

L19: Entry 35 of 64

File: USPT

Sep 3, 2002

US-PAT-NO: 6443883

DOCUMENT-IDENTIFIER: US 6443883 B1

TITLE: PEMF biophysical stimulation field generator device and method

DATE-ISSUED: September 3, 2002

INVENTOR-INFORMATION:

NAME

CITY

STATE ZIP CODE

COUNTRY

Ostrow; Alvin S.

Raanana

IL

Tannenbaum; Joseph

Jerusalem

IL

US-CL-CURRENT: 600/14

#### ABSTRACT:

A multi-functional, modular PEMF biophysical stimulation field generator device and healing system using small coils and a PEMF technique to create a high magnetic flux penetration into hard and soft tissues for treatment of a variety of conditions, including fractures and osteoporosis, to achieve an anticipated shorter healing and rehabilitation time. The orthogonally-arranged coils are sequentially-activated to develop a rotating cylindrical energy field focussed on a target area so as to stimulate bone growth. An activation signal having a combined waveform is used to activate the coils, comprising a high frequency carrier wave, which is amplitudemodulated, by a low frequency treatment wave for optimal penetration of biological tissue. In a preferred embodiment, a pre-form wrap is provided as a cast, brace or splint, containing small magnetizing coils, with the wrap being placed circumferentially around the body part containing the treatment site. By virtue of its modular design, the wrap may contain a portable power source, and it may be opened and the coils removed so that they may be placed over, in or under any orthopedic brace, cast, splint or garment. The coils are arranged to insure maximum focussing of the energy to the treatment site. Minimization of the undesired effects of electromagnetic fields on living tissue is achieved by using the small magnetizing coils, thereby preventing electromagnetic field dispersion to adjacent tissues, by a carrier frequency which improves the electromagnetic field concentration at the treatment site, and by the phasic stimulation which improves the electromagnetic beam concentration in the center, further eliminating electromagnetic field dispersion. The PEMF stimulation also develops an electrical field causing tetanic microcontractions in muscle tissue, thereby offsetting muscle atrophy, a common side effect of immobilization, creating gentle exercise loading, inducing bone growth stimulation. The integrated healing system comprising the inventive device, its placement and activation signal, is engineered to provide optimum therapy by combining the beneficial physiological effects resulting from combined device and treatment modalities to optimize and achieve more efficient results through a combined approach.

41 Claims, 19 Drawing figures Exemplary Claim Number: 10

Full Title Citation Front Review Classification Date Reference Communication Claims KMC Draw. Des

☐ 36. Document ID: US 6364824 B1

L19: Entry 36 of 64

File: USPT

Apr 2, 2002

US-PAT-NO: 6364824

DOCUMENT-IDENTIFIER: US 6364824 B1

\*\* See image for Certificate of Correction \*\*

TITLE: Stimulating cell receptor activity using electromagnetic fields

DATE-ISSUED: April 2, 2002

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Fitzsimmons; Robert J.

Mentone

CA

US-CL-CURRENT: 600/13; 600/15

## ABSTRACT:

A method and associated apparatus are presented for stimulating biological activity of cell receptors. The biological activity of cell receptors is stimulated by positioning a transmitter in proximity with the target cell receptors, generating an electromagnetic field, such that the flux of the electromagnetic field extends through the target cell receptors, and fluctuating the electromagnetic field at a predetermined rate of fluctuation. An associated apparatus is presented which stimulates biological activity of cell receptors. The apparatus comprises a field coil electrically connected to an alternating current source with a predetermined rate of fluctuation. The alternating current flows through the field coils, thereby generating an electromagnetic field with a predetermined rate of fluctuation.

8 Claims, 11 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 5

Full Title Citation Front Review Classification Date Reference Classification Description Description

☐ 37. Document ID: US 6263878 B1

L19: Entry 37 of 64

File: USPT

Jul 24, 2001

US-PAT-NO: 6263878

DOCUMENT-IDENTIFIER: US 6263878 B1

TITLE: Means for protecting living systems from adverse effects of electric, magnetic and electromagnetic fields

DATE-ISSUED: July 24, 2001

INVENTOR-INFORMATION:

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.20&ref=19&dbname=PGPB.USPT.U... 11/24/04

NAME

CITY

STATE

ZIP CODE

COUNTRY

Feb 20, 2001

COUNTRY

Litovitz; Theodore A.

Annapolis

US-CL-CURRENT: 128/897; 600/9

#### ABSTRACT:

An arrangement for inhibiting the adverse effect of an ambient time varying field having an electric component of 5 Kv/M or less and/or a magnetic component of 500 .mu.T or less on a living system. To provide protection, at least one of the characteristic parameters of said field to which the living system is exposed is changed within time intervals of less than 10 seconds.

80 Claims, 8 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 2

Full	Title Citation Front Review Classification (	Date Reference	Claims KMC Draw Desc
			_
***************************************			
	38. Document ID: US 6190893 B1		
L19:	Entry 38 of 64	File: USPT	Feb 20. 2001

US-PAT-NO: 6190893

DOCUMENT-IDENTIFIER: US 6190893 B1

TITLE: Electroactive materials for stimulation of biological activity of bone marrow

stromal cells

DATE-ISSUED: February 20, 2001

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE Shastri; Venkatram R. Allston MA Rahman; Nahid Cambridge MA Martin; Ivan Cambridge MA Langer, Jr.; Robert S. Newton MA

US-CL-CURRENT: 435/173.8

#### ABSTRACT:

Compositions, methods and systems are provided for the stimulation of biological activities within bone marrow stromal cells by applying electromagnetic stimulation to an electroactive material, wherein the electromagnetic stimulation is coupled to the electromagnetic material. In general the present invention involves attaching or associating the desired bone marrow stromal cells to or with a surface comprising an electroactive material, and applying electromagnetic radiation directly to the desired area. In preferred embodiments, the stimulation of biological activities within bone marrow stromal cells results from inducing one or more activities including, but not limited to, gene expression, cell growth, cell differentiation, signal transduction, membrane permeability, cell division and cell signalling. In particularly preferred embodiments, the present invention stimulates bone cell regeneration. In exemplary embodiments, the electroactive materials used in the present invention are either two-dimensional substrates such as thin films having at least one surface of an electroactive material, or in alternative embodiments, the

electroactive materials are three-dimensional substrates comprising a matrix having at least one surface of an electroactive material.

59 Claims, 24 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 22

Full	Title Citat	ion Front	Review	Classification	Date	Reference		Claims	KMIC	Draw Desi

☐ 39. Document ID: US 6095148 A

L19: Entry 39 of 64

File: USPT

Aug 1, 2000

May 9, 2000

US-PAT-NO: 6095148

DOCUMENT-IDENTIFIER: US 6095148 A

\*\* See image for Certificate of Correction \*\*

TITLE: Neuronal stimulation using electrically conducting polymers

DATE-ISSUED: August 1, 2000

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY Shastri; Venkatram R. Allston MA Schmidt; Christine E. Boston MA Langer; Robert S. Newton MA Vacanti; Joseph P. Winchester MA

US-CL-CURRENT: <u>128/898</u>; <u>607/116</u>, 607/117, 607/50

#### ABSTRACT:

Methods and support systems are provided for modifying the regeneration, differentiation, or function of cells. In one embodiment, electrically conducting biocompatible polymers may be used alone or in combination with a polymeric support for in vitro nerve cell regeneration, or in vivo to aid in healing nervous tissue defects. The conductive polymers may implanted adjacent to or seeded with nerve cells. Voltage or current is applied to the polymer in a range which induces the desired effect on the cells while not damaging the cells. The methods and systems can be used in a variety of applications to enhance in vivo or in vitro growth or regeneration of nervous tissue.

26 Claims, 7 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 4

Full	Title Citation Front I	•		<u>'</u>	WIC	Draw, Desc
	40. Document ID:	•••••••••••••••••••••••••••••••••••••••			***************************************	***************************************
L19:	Entry 40 of 64	File	: USPT	May	9,	2000

US-PAT-NO: 6061597

DOCUMENT-IDENTIFIER: US 6061597 A

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.20&ref=19&dbname=PGPB,USPT,U... 11/24/04

TITLE: Method and device for healing bone fractures

DATE-ISSUED: May 9, 2000

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Rieman; Robert D.

Durango

СО

81301

Wilson; Roger L.

Durango

CO

US-CL-CURRENT: 607/51; 607/52

#### ABSTRACT:

Methods for healing bone fractures are provided. The methods as provided herein involve the application of resonant frequency stimulation to promote fracture healing and also to diagnose status of fracture healing. The methods of the present invention are particularly desirable because they are site-specific, non-invasive and require a minimum amount of early healing or callus formation.

14 Claims, 3 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 3

Full	Title Ci	tation F	ront	Classification		Claims	Draw, Desc

## ☐ 41. Document ID: US 6010846 A

L19: Entry 41 of 64

File: USPT

Jan 4, 2000

US-PAT-NO: 6010846

DOCUMENT-IDENTIFIER: US 6010846 A

TITLE: Methods for measuring cellular proliferation and destruction rates in vitro

and in vivo

DATE-ISSUED: January 4, 2000

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Hellerstein; Marc K.

Kensington

CA

US-CL-CURRENT: 435/4; 435/29, 435/6

#### ABSTRACT:

The present invention relates to methods for measuring the proliferation and destruction rates of cells by measuring deoxyribonucleic acid (DNA) synthesis and/or destruction. In particular, the methods utilize non-radioactive stable isotope labels to endogenously label DNA synthesized through the de novo nucleotide synthesis pathway in a cell. The amount of label incorporated in the DNA is measured as an indication of cellular proliferation. The decay of labeled DNA over time is measured as an indication of cellular destruction. Such methods do not involve radioactivity or potentially toxic metabolites, and are suitable for use both in vitro and in vivo. Therefore, the invention is useful for measuring cellular proliferation or cellular destruction rates in humans for the diagnosis, prevention, or management of a variety of disease conditions in which cellular proliferation or cellular destruction is

involved. The invention also provides methods for measuring proliferation or destruction of T cells in a subject infected with human immunodeficiency virus (HIV) and methods of screening an agent for a capacity to induce or inhibit cellular proliferation or destruction. In addition, the invention provides methods for measuring cellular proliferation in a proliferating population which utilize both radioactive isotope labels and stable isotopes to endogenously label DNA through the de novo nucleotide synthesis pathway.

24 Claims, 29 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 17

Full Title Citation Front Review Classification Date Reference Citation Claims KNMC Drawn Desc

☐ 42. Document ID: US 6005161 A

L19: Entry 42 of 64

File: USPT

Dec 21, 1999

US-PAT-NO: 6005161

DOCUMENT-IDENTIFIER: US 6005161 A

\*\* See image for Certificate of Correction \*\*

TITLE: Method and device for reconstruction of articular cartilage

DATE-ISSUED: December 21, 1999

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE COUNTRY

Brekke; John H.

Duluth

MN

COONTRI

Coutts; Richard D.

San Diego

CA

US-CL-CURRENT: 424/422

#### ABSTRACT:

A biodegradable device for facilitating healing of structural voids in bone, cartilage as well as soft tissue is disclosed in the most preferred form including a porous macrostructure made from a biodegradable polymer and a chemotactic ground substance in the form of an RGD attachment moiety of fibronectin formed as a porous microstructure. For repair of articular cartilage, harvested precursor cells are secured to the biodegradable carrier which is shaped for press fitting into the articular cartilage lesion. In the most preferred form, the chemotactic ground substance enhances the attractiveness of the biodegradable device for cellular attachment at the site of repair and also facilitates the attachment of free, precursor cells such as chondrocytes and bone marrow to the biodegradable device. In the most preferred form, biological modifiers such as transforming growth factor B and basic fibroblastic growth factor is incorporated in the biodegradable device to mediate cellular activity and regulate cellular functions.

6 Claims, 7 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 3

Full Title Citation Front Review Classification Date Reference

☐ 43. Document ID: US 5948428 A

L19: Entry 43 of 64

File: USPT

Sep 7, 1999

US-PAT-NO: 5948428

DOCUMENT-IDENTIFIER: US 5948428 A

\*\* See image for Certificate of Correction \*\*

TITLE: Compositions and therapeutic methods using morphogenic proteins and

stimulatory factors

DATE-ISSUED: September 7, 1999

INVENTOR-INFORMATION:

Yeh; Lee-Chuan C.

NAME

CITY

STATE

ZIP CODE

COUNTRY

Lee; John C.

San Antonio
San Antonio

TX TX

US-CL-CURRENT: <u>424/426</u>; 523/114, 523/115, 530/353

#### ABSTRACT:

The present invention provides pharmaceutical compositions comprising a morphogenic protein stimulatory factor (MPSF) for improving the tissue inductive activity of morphogenic proteins, particularly those belonging to the BMP protein family. Methods for improving the tissue inductive activity of a morphogenic protein in a mammal using those compositions are provided. This invention also provides implantable morphogenic devices comprising a morphogenic protein and a MPSF disposed within a carrier, that are capable of inducing tissue formation in allogeneic and xenogeneic implants. Methods for inducing local tissue formation from a progenitor cell in a mammal using those devices are also provided. A method for accelerating allograft repair in a mammal using morphogenic devices is provided. This invention also provides a prosthetic device comprising a prosthesis coated with a morphogenic protein and a MPSF, and a method for promoting in vivo integration of an implantable prosthetic device to enhance the bond strength between the prosthesis and the existing target tissue at the joining site. Methods of treating tissue degenerative conditions in a mammal using the pharmaceutical compositions are also provided.

78 Claims, 17 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 16

Full	Title Citation Front	Review Classification Date	Reference	Claims KMC Draw Desi
·····		- New Lab		4,432
	44. Document ID:			
L19:	Entry 44 of 64		File: USPT	May 18, 1999

US-PAT-NO: 5904717

DOCUMENT-IDENTIFIER: US 5904717 A

\*\* See image for Certificate of Correction \*\*

TITLE: Method and device for reconstruction of articular cartilage

DATE-ISSUED: May 18, 1999

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Brekke; John H.

Duluth

MN

Coutts; Richard D.

San Diego

CA

US-CL-CURRENT: 424/423

#### ABSTRACT:

A biodegradable device for facilitating healing of structural voids in bone, cartilage as well as soft tissue is disclosed in the most preferred form including a porous macrostructure made from a biodegradable polymer and a chemotactic ground substance in the form of an RGD attachment moiety of fibronectin formed as a porous microstructure. For repair of articular cartilage, harvested precursor cells are secured to the biodegradable carrier which is shaped for press fitting into the articular cartilage lesion. In the most preferred form, the chemotactic ground substance enhances the attractiveness of the biodegradable device for cellular attachment at the site of repair and also facilitates the attachment of free, precursor cells such as chondrocytes and bone marrow to the biodegradable device. In the most preferred form, biological modifiers such as transforming growth factor B and basic fibroblastic growth factor is incorporated in the biodegradable device to mediate cellular activity and regulate cellular functions.

25 Claims, 7 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 3

Full	Title	Citation Front Review Classification Date Reference
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
	45.	Document ID: US 5755792 A

File: USPT

US-PAT-NO: 5755792

L19: Entry 45 of 64

DOCUMENT-IDENTIFIER: US 5755792 A

TITLE: Method and apparatus for biodegradable, osteogenic, bone graft substitute

device

DATE-ISSUED: May 26, 1998

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

May 26, 1998

Brekke; John H.

Duluth

US-CL-CURRENT: 128/898; 623/23.72

## ABSTRACT:

Device and method for treating mammalian bone deficiencies, defects, voids and conformational discontinuities produced by congenital deformities, osseous and/or soft tissue pathology, traumatic injuries and functional atrophy is described. The device is a one piece molded body member composed of four substances, each of which contributes to the device, a specific requirement (or requirements) for osteogenesis and/or osteoneogenesis. Taken as a whole, the functions of these device constituents are integrated into a single body member which, when implanted into a bone defect,

has the capacity to restore functional architecture and mechanical integrity, initiate osteoinduction and osteogenesis, and maintain the biological processes of bone formation and remodeling while the host organism is simultaneously biodegrading the body member. The ultimate result of the functioning is formation of healthy, viable bone tissue where there was not bone before, while, simultaneously, the entire device is hydrolyzed and completely metabolized by the host organism. The device comprises four disparate elements: POLYLACTIC ACID, HYALURONIC ACID BONE MORPHOGENETIC PROTEIN and BONE DERIVED GROWTH FACTOR. Working together, these elements provide the following five biological functions prerequisite to the processes of osteoneogenesis: structural competence (polylactic acid), chemotaxis (hyaluronic acid), electronegative field (hyaluronic acid and physical-chemical electrokinetic events), osteoinduction (bone morphogenetic protein), and osteogenesis (bone derived growth factor).

20 Claims, 6 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 2

Full	Title Citation Front	Review Classification				KOME	Draw, Desc
				***************************************	 ·····		
	46. Document ID:	US 5709223 A					
L19:	Entry 46 of 64		File:	USPT	Jan	20,	1998

STATE

ZIP CODE

COUNTRY

US-PAT-NO: 5709223

DOCUMENT-IDENTIFIER: US 5709223 A

TITLE: Magnetically modified microbial metabolism

DATE-ISSUED: January 20, 1998

INVENTOR-INFORMATION:

NAME CITY

Rawls, Jr.; Walter C. Jacksonville FL

Provell; Gregory J. Somerset NJ

US-CL-CURRENT: 128/898

#### ABSTRACT:

This invention pertains to a method of modifying the reproduction rate of cells by exposing the cells to north directional unipolar magnetic fields, thereby decreasing the reproduction rate of the cells. The reproduction rate of the cells can also be modified by exposing them to south directional unipolar magnetic fields, thereby increasing the reproduction rate of the cells.

2 Claims, 10 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 7

	***************************************
Full Title Citation Front Review Classification Date Reference	KMMC - Drawe Desc
The title state that the state of the state	

☐ 47. Document ID: US 5683459 A

US-PAT-NO: 5683459

DOCUMENT-IDENTIFIER: US 5683459 A

## \*\* See image for Certificate of Correction \*\*

TITLE: Method and apparatus for biodegradable, osteogenic, bone graft substitute

device

DATE-ISSUED: November 4, 1997

INVENTOR-INFORMATION:

NAME

CITY

STATE ZIP CODE

COUNTRY

Brekke; John H.

Duluth

MN

US-CL-CURRENT: 424/423

#### ABSTRACT:

Device and method for treating mammalian bone deficiencies, defects, voids and conformational discontinuities produced by congenital deformities, osseous and/or soft tissue pathology, traumatic injuries and functional atrophy is described. The device is a one piece molded body member composed of four substances, each of which contributes to the device, a specific requirement (or requirements) for osteogenesis and/or osteoneogenesis. Taken as a whole, the functions of these device constituents are integrated into a single body member which, when implanted into a bone defect, has the capacity to restore functional architecture and mechanical integrity, initiate osteoinduction and osteogenesis, and maintain the biological processes of bone formation and remodeling while the host organism is simultaneously biodegrading the body member. The ultimate result of the functioning is formation of healthy, viable bone tissue where there was not bone before, while, simultaneously, the entire device is hydrolyzed and completely metabolized by the host organism. The device comprises four disparate elements: POLYLACTIC ACID, HYALURONIC ACID BONE MORPHOGENETIC PROTEIN and BONE DERIVED GROWTH FACTOR. Working together, these elements provide the following five biological functions prerequisite to the processes of osteoneogenesis: structural competence (polylactic acid), chemotaxis (hyaluronic acid), electronegative field (hyaluronic acid and physical-chemical electrokinetic events), osteoinduction (bone morphogenetic protein), and osteogenesis (bone derived growth factor).

15 Claims, 6 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 2

Full	Title	Citation From			Date Reference		Claims	K000C	Draw, Desc
	48.	Document	ID: US 56	656450 A					
L19:	Entr	y 48 of 64	Į.		File:	USPT	Aug	12,	1997

US-PAT-NO: 5656450

DOCUMENT-IDENTIFIER: US 5656450 A

TITLE: Activation of latent transforming growth factor .beta. by matrix vesicles

DATE-ISSUED: August 12, 1997

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Boyan; Barbara D.

San Antonio

TX

Schwartz; Zvi

San Antonio

TX

Bonewald; Lynda F.

San Antonio

ΤX

US-CL-CURRENT: 435/68.1; 424/422, 424/548, 424/93.7, 435/173.1, 435/173.8, 435/177, 435/180, 435/182, 435/325, 435/395, 514/21, 530/812, 530/815, 530/817

#### ABSTRACT:

A latent growth factor such as transforming growth factor beta (TGF.beta.) is converted to active form by matrix vesicles or an extract from matrix vesicles. The matrix vesicles may be stimulated with a Regulator of Enhancing Factor (REF) such as 1,25-dihydroxy vitamin D (1,25-(OH).sub.2 D.sub.3) or steroid hormones which may be intercalated into the vesicle membrane. The latent growth factor may be activated in culturing cells such as chondrocytes that have been pretreated with 24,25-(OH).sub.2 D.sub.3 to activate cell differentiation, or in healing of bone or cartilage defects, and activation can be carried out in vivo or in vitro. Biodegradable polymeric implants may be prepared containing latent growth factor, REF, matrix vesicle or matrix vesicle extract.

9 Claims, 5 Drawing figures Exemplary Claim Number: 1,6 Number of Drawing Sheets: 3

Full Title Citation Front	ate Reference	Claims	KMMC   Draw Desc
		·····	

## ☐ 49. Document ID: US 5544665 A

L19: Entry 49 of 64

File: USPT

Aug 13, 1996

US-PAT-NO: 5544665

DOCUMENT-IDENTIFIER: US 5544665 A

TITLE: Protection of living systems from adverse effects of electric, magnetic and electromagnetic fields

creetionagnetic fretas

DATE-ISSUED: August 13, 1996

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE COUNTRY

Litovitz; Theodore A.

Annapolis

MD

Penafiel; Luis M.

Rockville

MD

US-CL-CURRENT: 128/897; 600/9

## ABSTRACT:

The embodiments of the inventions disclosed in this application develop a 'protection' electric, magnetic or <u>electromagnetic field</u> or fields which are either superimposed upon an ambient field which is detrimental to the health of living systems, or incorporated into the electrical circuit of the device which is generating the detrimental field. Either arrangement is successful in 'confusing' living cells, and thereby reducing the harmful effects of the otherwise detrimental field.

8 Claims, 45 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 24

Full Title Citation Front Review Classification Date Reference Claims KWIC Draw. Desc

☐ 50. Document ID: US 5484388 A

L19: Entry 50 of 64

File: USPT

Jan 16, 1996

US-PAT-NO: 5484388

DOCUMENT-IDENTIFIER: US 5484388 A

TITLE: Method and device for treating bone disorders by applying preload and

repetitive impacts

DATE-ISSUED: January 16, 1996

INVENTOR-INFORMATION:

NAME

CITY

STATE ZIP CODE

COUNTRY

Bassett; C. Andrew L.

Bronxville

NY

Bassett; Govert L.

Charlotte

NC

US-CL-CURRENT:  $\underline{601}/\underline{27}$ ;  $\underline{601}/\underline{100}$ ,  $\underline{601}/\underline{33}$ ,  $\underline{601}/\underline{51}$ 

#### ABSTRACT:

Bone disorders may be treated by applying a compressive preload and repetitive impacts. The patient may be maintained in a static position and the preload be provided by gravity or compression. The impact load, impact rate, and a number of impacts determined by a physician prior to treatment are chosen to generate electrical signals in the patient's bone such that the majority of energy of the electrical signals lies between 0.1 Hz and 1 kHz, and the peak amplitude values of the electrical signals lie between 15 and 30 Hz.

21 Claims, 6 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 4

······································		-
Full Title Citation Front Review	Classification Date Reference Claims KNMC Draw, De.	8
· · · · · · · · · · · · · · · · · · ·		•

## ☐ 51. Document ID: US 5458558 A

L19: Entry 51 of 64

File: USPT

Oct 17, 1995

US-PAT-NO: 5458558

DOCUMENT-IDENTIFIER: US 5458558 A

\*\* See image for Certificate of Correction \*\*

TITLE: Method for controlling tissue growth with an applied fluctuating magnetic field

DATE-ISSUED: October 17, 1995

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Liboff; Abraham R.

Birmingham

McLeod; Bruce R.

Bozeman

MΙ TM

Smith; Stephen D.

Bozeman

MT

US-CL-CURRENT: <u>600/13</u>; <u>607/51</u>

#### ABSTRACT:

An apparatus and method for regulating tissue growth in vivo are provided. The apparatus includes a magnetic field generator and a magnetic field detector for producing a controlled, fluctuating, directionally oriented magnetic field parallel to a predetermined axis projecting through the target tissue. The field detector samples the magnetic flux density along the predetermined access and provides a signal to a microprocessor which determines the average value of the flux density. The applied magnetic field is oscillated at predetermined frequencies to maintain a preselected ratio of frequency to average flux density. This ratio is maintained by adjusting the frequency of the fluctuating magnetic field and/or by adjusting the intensity of the applied magnetic field as the composite magnetic flux density changes in response to changes in the local magnetic field to which the target tissue is subjected. By maintaining these precise predetermined ratios of frequency to average magnetic flux density, growth characteristics of the target tissue are controlled.

1 Claims, 6 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 3

Full Title Citation Front Review Classification C	Date Reference	Claims KMC Draw, Desc
☐ 52. Document ID: US 5450859 A		
1.19. Entry 52 of 64	File: HSPT	Sen 19 1995

US-PAT-NO: 5450859

DOCUMENT-IDENTIFIER: US 5450859 A

TITLE: Protection of living systems from adverse effects of electric, magnetic and

electromagnetic fields

DATE-ISSUED: September 19, 1995

INVENTOR-INFORMATION:

NAME

CITY

STATE ZIP CODE COUNTRY

Litovitz; Theodore A.

Annapolis

MD

US-CL-CURRENT: 128/897; 600/9

#### ABSTRACT:

The disclosed embodiments of the inventions disclosed in this application develop a `protection` electric, magnetic or electromagnetic field or fields which are either superimposed upon an ambient field which is detrimental to the health of living systems, or is incorporated into the electrical circuit of the device which is generating the detrimental field. Either arrangement is successful in `confusing`

living cells, and thereby reducing the harmful effects of the otherwise detrimental field.

52 Claims, 42 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 22

Full Title Citation Front Review Classification Date Reference Claims KMIC Draw Des.

☐ 53. Document ID: US 5366508 A

L19: Entry 53 of 64

File: USPT

Nov 22, 1994

US-PAT-NO: 5366508

DOCUMENT-IDENTIFIER: US 5366508 A

\*\* See image for Certificate of Correction \*\*

TITLE: Apparatus for biodegradable, osteogenic, bone graft substitute device

DATE-ISSUED: November 22, 1994

INVENTOR-INFORMATION:

NAME

CITY

STATE ZIP CODE

COUNTRY

Brekke; John H.

Duluth

MN

US-CL-CURRENT: 623/23.58; 424/422, 424/423

#### ABSTRACT:

Device and method for treating mammalian bone deficiencies, defects, voids and conformational discontinuities produced by congenital deformities, osseous and/or soft tissue pathology, traumatic injuries and functional atrophy is described. The device is a one piece molded body member composed of four substances, each of which contributes to the device, a specific requirement (or requirements) for osteogenesis and/or osteoneogenesis. Taken as a whole, the functions of these device constituents are integrated into a single body member which, when implanted into a bone defect, has the capacity to restore functional architecture and mechanical integrity, initiate osteoinduction and osteogenesis, and maintain the biological process of bone formation and remodeling while the host organism is simultaneously biodegrading the body member. The ultimate result of the functioning is formation of healthy, viable bone tissue where there was not bone before, while, simultaneously, the entire device is hydrolyzed and completely metabolized by the host organism. The device comprises four disparate elements: POLYLACTIC ACID, HYALURONIC ACID BONE MORPHOGENETIC PROTEIN and BONE DERIVED GROWTH FACTOR. Working together, these elements provide the following five biological functions prerequisite to the processes of osteoneogenesis: structural competence (polylactic acid), chemotaxis (hyaluronic acid), electronegative field (hyaluronic acid and physical-chemical electrokinetic events), osteoinduction (bone morphogenetic protein), and osteogenesis (bone derived growth factor).

22 Claims, 6 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 2

Full Title Citation Front Review Classification Date Reference Claims KMC Draw. Des

☐ 54. Document ID: US 5318045 A

L19: Entry 54 of 64

File: USPT

Jun 7, 1994

US-PAT-NO: 5318045

DOCUMENT-IDENTIFIER: US 5318045 A

TITLE: Magnetically modified microbial metabolism

DATE-ISSUED: June 7, 1994

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Rawls, Jr.; Walter C.

FL

Provell; Gregory J.

Somerset

Jacksonville

NJ

US-CL-CURRENT: 128/898

#### ABSTRACT:

A method is provided for the modification of microbial metabolism using a unipolar magnetic field. By applying a unipolar magnetic field to microbes under controlled conditions, changes in the rate and/or efficiency of metabolism are produced.

12 Claims, 10 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 7

55.	Document ID:	US 5269745 A

Title Citation Front Review Classification Date Reference

L19: Entry 55 of 64

File: USPT

Dec 14, 1993

Claims K000C

US-PAT-NO: 5269745

DOCUMENT-IDENTIFIER: US 5269745 A

TITLE: Method and apparatus for controlling tissue growth with an applied fluctuating

magnetic field

DATE-ISSUED: December 14, 1993

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Liboff; Abraham R.

Birmingham

ΜI

McLeod; Bruce R.

Bozeman

MT

Smith; Stephen D.

Bozeman

ΜТ

US-CL-CURRENT: 600/13; 607/51

## ABSTRACT:

An apparatus and method for regulating tissue growth in vivo are provided. The apparatus includes a magnetic field generator and a magnetic field detector for

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.20&ref=19&dbname=PGPB,USPT,U... 11/24/04

producing a controlled, fluctuating, directionally oriented magnetic field parallel to a predetermined axis projecting through the target tissue. The field detector samples the magnetic flux density along the predetermined access and provides a signal to a microprocessor which determines the average value of the flux density. The applied magnetic field is oscillated at predetermined frequencies to maintain a preselected ratio of frequency to average flux density. This ratio is maintained by adjusting the frequency of the fluctuating magnetic field and/or by adjusting the intensity of the applied magnetic field as the composite magnetic flux density changes in response to changes in the local magnetic field to which the target tissue is subjected. By maintaining these precise predetermined ratios of frequency to average magnetic flux density, growth characteristics of the target tissue are controlled.

1 Claims, 6 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 3

Full	Title Citation Front Review	Classification Date	Reference	Claims	KNMC   Draw Des
					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	56. Document ID: US 52	267939 A			
L19:	Entry 56 of 64		File: USPT	De	c 7, 1993

US-PAT-NO: 5267939

DOCUMENT-IDENTIFIER: US 5267939 A

\*\* See image for Certificate of Correction \*\*

TITLE: Techniques for controlling osteoporosis using non-invasive magnetic fields

COUNTRY

DATE-ISSUED: December 7, 1993

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE

Liboff; Abraham R. Birmingham MI McLeod; Bruce R. Bozeman MT Smith; Stephen D. Lexington KY

US-CL-CURRENT: 600/13; 600/15, 607/52

#### ABSTRACT:

An apparatus and method for preventing and therapeutically treating osteoporosis are provided. The apparatus includes a magnetic field generator for producing a controlled, fluctuating, directionally oriented magnetic field parallel to a predetermined axis projecting through the target bone or skeletal system. In one aspect, a field detector samples the magnetic flux density along the predetermined axis and provides a signal to a microprocessor which determines the average value of the flux density. The applied magnetic field is oscillated at predetermined frequencies to maintain a preselected ratio of frequency to average flux density which controls osteoporosis. This ratio is maintained by adjusting the frequency of the fluctuating magnetic field and/or by adjusting the intensity of the applied magnetic field as the composite magnetic flux density changes in response to changes in the local magnetic field to which the target bone is subjected.

3 Claims, 8 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 4 ☐ 57. Document ID: US 5197492 A

L19: Entry 57 of 64

File: USPT

Mar 30, 1993

US-PAT-NO: 5197492

DOCUMENT-IDENTIFIER: US 5197492 A

TITLE: Focused magnetic directional polarities

DATE-ISSUED: March 30, 1993

INVENTOR-INFORMATION:

NAME

CITY

STATE ZIP CODE

COUNTRY

Rawls, Jr.; Walter C. Provell; Gregory J.

Jacksonville

 $_{
m FL}$ 

Somerset NJ

US-CL-CURRENT: 128/846; 128/849

#### ABSTRACT:

A method is provided for focusing magnetic fields, reducing magnetic fields and shielding animate or inanimate subjects from magnetic fields. Further a media which has been subjected to a shielded or focused magnetic field is applied to a subject, as for example, topically. The method, in part, interposes between the subjects and the source of a magnetic field, at least one second magnetic field disposed in such a manner that the polarity of the second magnetic field cancels or at least partially neutralizes the magnetic strength of the first magnetic field. The second magnetic field can also be disposed so as to permit only a portion of the first magnetic field to escape shielding and thereby focused in a predetermined direction. Devices which normally emit magnetic energy and containing the shielding of the present invention are also provided.

15 Claims, 5 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 5

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	£100£C	Draw, Desi

## ☐ 58. Document ID: US 5133755 A

L19: Entry 58 of 64

File: USPT

Jul 28, 1992

US-PAT-NO: 5133755

DOCUMENT-IDENTIFIER: US 5133755 A

\*\* See image for Certificate of Correction \*\*

TITLE: Method and apparatus for diodegradable, osteogenic, bone graft substitute device

DATE-ISSUED: July 28, 1992

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Jun 23, 1992

Brekke; John H.

Duluth

MN

US-CL-CURRENT: 623/23.51

#### ABSTRACT:

Device and method for treating mammalian bone deficiencies, defects, voids and conformational discontinuities produced by congenital deformities, osseous and/or soft tissue pathology, traumatic injuries and functional atrophy is described. The device is a one piece molded body member composed of four substances, each of which contributes to the device, a specific requirement (or requirements) for osteogenesis and/or osteoneogenesis. Taken as a whole, the functions of these device constituents are integrated into a single body member which, when implanted into a bone defect, has the capacity to restore functional architecture and mechanical integrity, initiate osteoinduction and osteogenesis, and maintain the biological processes of bone formation and remodeling while the host organism is simultaneously biodegrading the body member. The ultimate result of the functioning is formation of healthy, viable bone tissue where there was not bone before, while, simultaneously, the entire device is hydrolyzed and completely metabolized by the host organism. The device comprises four disparate elements: polylactic acid, hyaluronic acid bone morphogenetic protein and bone derived growth factor. Working together, these elements provide the following five biological functions prerequisite to the processes of osteoneogenesis: structural competence (polylactic acid), chemotaxis (hyaluronic acid), electronegative field (hyaluronic acid and physical-chemical electrokinetic events), osteoinduction (bone morphogenetic protein), and osteogenesis (bone derived growth factor).

10 Claims, 6 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 2

Ful	T	itle	Citation	Front	Review	Classification	Date	Reference			Claims	ЮМС	Draw Desc
			Docume			123898 A	······································	~~~~	······································	······································		•••••	······································

File: USPT

US-PAT-NO: 5123898

L19: Entry 59 of 64

DOCUMENT-IDENTIFIER: US 5123898 A

\*\* See image for Certificate of Correction \*\*

TITLE: Method and apparatus for controlling tissue growth with an applied fluctuating magnetic field

DATE-ISSUED: June 23, 1992

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Liboff; Abraham R. Birmingham MI McLeod; Bruce R. Bozeman MT Smith; Stephen D. Bozeman MT

US-CL-CURRENT: 600/13

#### ABSTRACT:

An apparatus and method for regulating tissue growth in vivo are provided. The apparatus includes a magnetic field generator and a magnetic field detector for producing a controlled, fluctuating, directionally oriented magnetic field parallel to a predetermined axis projecting through the target tissue. The field detector samples the magnetic flux density along the predetermined access and provides a signal to a microprocessor which determines the average value of the flux density. The applied magnetic field is oscillated at predetermined frequencies to maintain a preselected ratio of frequency to average flux density. This ratio is maintained by adjusting the frequency of the fluctuating magnetic field and/or by adjusting the intensity of the applied magnetic field as the composite magnetic flux density changes in response to changes in the local magnetic field to which the target tissue is subjected. By maintaining these precise predetermined ratios of frequency to average magnetic flux density, growth characteristics of the target tissue are controlled.

5 Claims, 6 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 3

Full Title Citation Front Review Classification Dat	te Reference	Claims KWMC Draw, Desc
☐ 60. Document ID: US 5100373 A		
L19: Entry 60 of 64	File: USPT	Mar 31, 1992

US-PAT-NO: 5100373

DOCUMENT-IDENTIFIER: US 5100373 A

\*\* See image for Certificate of Correction \*\*

TITLE: Techniques for controlling osteoporosis using non-invasive magnetic fields

DATE-ISSUED: March 31, 1992

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY
Liboff; Abraham R. Birmingham MI
McLeod; Bruce R. Bozeman MT
Smith; Stephen D. Lexington KY

US-CL-CURRENT: 600/13; 600/18, 602/2

## ABSTRACT:

An apparatus and method for preventing and therapeutically treating osteoporosis are provided. The apparatus includes a magnetic field generator for producing a controlled, fluctuating, directionally oriented magnetic field parallel to a predetermined axis projecting through the target bone or skeletal system. In one aspect, a field detector samples the magnetic flux density along the predetermined axis and provides a signal to a microprocessor which determines the average value of the flux density. The applied magnetic field is oscillated at predetermined frequencies to maintain a preselected ratio of frequency to average flux density which controls osteoporosis. This ratio is maintained by adjusting the frequency of the fluctuating magnetic field and/or by adjusting the intensity of the applied magnetic field as the composite magnetic flux density changes in response to changes in the local magnetic field to which the target bone is subjected.

17 Claims, 8 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 4

Full Title Citation Front Review Classification Date Reference Claims KMC Draw Desc

☐ 61. Document ID: US 5002068 A

L19: Entry 61 of 64

File: USPT

Mar 26, 1991

US-PAT-NO: 5002068

DOCUMENT-IDENTIFIER: US 5002068 A

\*\* See image for Certificate of Correction \*\*

TITLE: Shielding and focusing of magnetic fields

DATE-ISSUED: March 26, 1991

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Provell; Gregory J.

Somerset

NJ

US-CL-CURRENT: 128/846; 128/849

#### ABSTRACT:

A method is provided for shielding humans and inanimate subjects from magnetic fields. The method includes, in part, interposing between the subjects and the source of a magnetic field, at least one second magnetic field disposed in such a manner that the polarity of the second magnetic field cancels or at least partially neutralizes the magnetic strength of the first magnetic field. The second magnetic field can also be disposed so as to permit only a portion of the first magnetic field to escape shielding and thereby focused in a predetermined direction. Devices which normally emit magnetic enegy and containing the shielding of the present invention are also provided.

10 Claims, 1 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 1

Full Title Citation Front Review Classification Date Reference Classification Date Reference Classification Claims KMC Draw. Desc

☐ 62. Document ID: US 4932951 A

L19: Entry 62 of 64

File: USPT

Jun 12, 1990

US-PAT-NO: 4932951

DOCUMENT-IDENTIFIER: US 4932951 A

\*\* See image for Certificate of Correction \*\*

TITLE: Method and apparatus for controlling tissue growth and an applied fluctuating magnetic field

DATE-ISSUED: June 12, 1990

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Liboff; Abraham R.

Birmingham

MT

McLeod; Bruce R.

Bozeman

MT

Smith; Stephen D.

Bozeman

MT

US-CL-CURRENT:  $\underline{600}/\underline{13}$ ;  $\underline{600}/\underline{15}$ ,  $\underline{606}/\underline{13}$ 

#### ABSTRACT:

An apparatus and method for regulating tissue growth in vivo are provided. The apparatus includes a magnetic field generator and a magnetic field detector for producing a controlled, fluctuating, directionally oriented magnetic field parallel to a predetermined axis projecting through the target tissue. The field detector samples the magnetic flux density along the predetermined access and provides a signal to a microprocessor which determines the average value of the flux density. The applied magnetic field is oscillated at predetermined frequencies to maintain a preselected ratio of frequency to average flux density. This ratio is maintained by adjusting the frequency of the fluctuating magnetic field and/or by adjusting the intensity of the applied magnetic field as the composite magnetic flux density changes in response to changes in the local magnetic field to which the target tissue is subjected. By maintaining these precise predetermined ratios of frequency to average magnetic flux density, growth characteristics of the target tissue are controlled.

17 Claims, 6 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 3

Full Title Citation Front Review Classificatio	n Date Reference	Claims KMC Draw Desc
☐ 63. Document ID: US 4905671 A		
L19: Entry 63 of 64	File: USPT	Mar 6, 1990

US-PAT-NO: 4905671

DOCUMENT-IDENTIFIER: US 4905671 A

TITLE: Inducement of bone growth by acoustic shock waves

DATE-ISSUED: March 6, 1990

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY Senge; Theodor A. Castrop-Rauxel DE

Richter; Klaus-Dieter Havixbeck DE Schwarze; Werner Stockach DE

US-CL-CURRENT: 601/4

#### ABSTRACT:

A method of inducing bone growth which comprises directing energy in the form of acoustic shock waves to a site where bone growth is desired, the amount of energy applied being sufficient to produce bleeding.

# Full Title Citation Front Review Classification Date Reference Citation Claims KMMC Draw, Desc

# ☐ 64. Document ID: WO 200027295 A1, US 6364824 B1, AU 200017192 A, EP 1137370 A1

L19: Entry 64 of 64

File: DWPI

May 18, 2000

DERWENT-ACC-NO: 2000-399424

DERWENT-WEEK: 200226

COPYRIGHT 2004 DERWENT INFORMATION LTD

TITLE: Osteoblast stimulation method for treatment of osteoporosis, involves positioning transmitter proximate to target receptors so that electromagnetic field of preset fluctuation rate activates the target receptor

INVENTOR: FITZSIMMONS, R J

PRIORITY-DATA: 1998US-107927P (November 11, 1998), 1999US-0438749 (November 11, 1999)

#### PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200027295 A1	May 18, 2000	E	026	A61B017/52
US 6364824 B1	April 2, 2002		000	A61N002/02
AU 200017192 A	May 29, 2000		000	A61B017/52
EP 1137370 A1	October 4, 2001	E	000	A61B017/52

INT-CL (IPC): A61 B 17/52; A61 N 1/00; A61 N 2/00; A61 N 2/02

ABSTRACTED-PUB-NO: US 6364824B

BASIC-ABSTRACT:

NOVELTY - A transmitter is positioned proximate to a target receptor contained in a living organism. The transmitter generates an <u>electromagnetic field</u> having a predetermined rate of fluctuation of ca. 379 Hz to activate the target receptor. The transmitter is positioned such that the flux of the magnetic field extends through the target receptor.

 $\begin{tabular}{ll} {\tt DETAILED} & {\tt DESCRIPTION} & {\tt -An INDEPENDENT} & {\tt CLAIM} & {\tt is also included for an } \underline{{\tt osteoblast}} \\ {\tt stimulation device.} \end{tabular}$ 

USE - For forming new bone for the treatment of osteoporosis especially in females.

 $\label{eq:advantage} \mbox{ADVANTAGE - Stimulates cell receptor activity with lower energy $$\underline{electromagnetic}$ fields.}$ 

DESCRIPTION OF DRAWING(S) - The figure shows a block diagram of an induced cell receptor activity. ABSTRACTED-PUB-NO:

WO 200027295A EQUIVALENT-ABSTRACTS:

NOVELTY - A transmitter is positioned proximate to a target receptor contained in a living organism. The transmitter generates an <u>electromagnetic field</u> having a predetermined rate of fluctuation of ca. 379 Hz to activate the target receptor. The

http://westbrs:9000/bin/gate.exe?f=TOC&state=m5lbjo.20&ref=19&dbname=PGPB,USPT,U... 11/24/04

transmitter is positioned such that the flux of the magnetic field extends through the target receptor.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for an <u>osteoblast</u> stimulation device.

USE - For forming new bone for the treatment of osteoporosis especially in females.

ADVANTAGE - Stimulates cell receptor activity with lower energy  $\underline{\text{electromagnetic}}$  fields.

DESCRIPTION OF DRAWING(S) - The figure shows a block diagram of an induced cell receptor activity.

Full Title Citation Fr	ont Review Classification	Date Reference	Claims KOMC Draw Des
	Collection Print	4	**************************************
Terms		Documents	
L18 AND L16	5		64

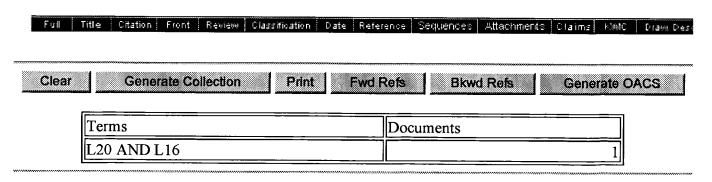
Display Format: - Change Format

Previous Page Next Page Go to Doc#

## Hit List

Clear Generate Collection Print Fwd Refs **Bkwd Refs Generate OACS** Search Results - Record(s) 1 through 1 of 1 returned. ☐ 1. Document ID: US 20030233124 A1 Using default format because multiple data bases are involved. L21: Entry 1 of 1 File: PGPB Dec 18, 2003 PGPUB-DOCUMENT-NUMBER: 20030233124 PGPUB-FILING-TYPE: new DOCUMENT-IDENTIFIER: US 20030233124 A1 TITLE: Methods of treating disorders by altering ion flux across cell membranes with electric fields PUBLICATION-DATE: December 18, 2003 INVENTOR-INFORMATION: NAME CITY STATE COUNTRY RULE-47 Hara, Akikuni Tokyo VA JP Hara, Hiroyuki Tokyo JΡ Suzuki, Naoyoshi Tokyo JΡ Harakawa, Shinji Tokyo JΡ Uenaka, Nobuo Tokyo JP Martin, David E. Charlottesville US

US-CL-CURRENT: 607/3

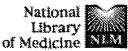


Display Format: - Change Format

Previous Page Next Page Go to Doc#







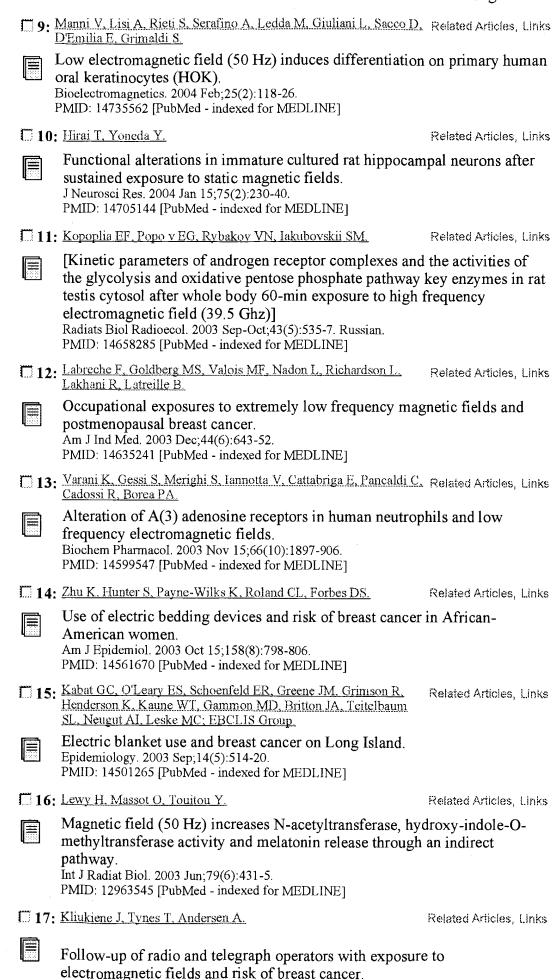
PMC Entres PubMed Nucleotide Fratein Genome Structure MIMO Journals Books Search | PubMed Go Clear for electromagnetic field AND receptor Limits Preview/Index Clipboard Details History Display Summary Show: 500 Send to Text About Entrez Items 1 - 99 of 99 One page Text Version 1: Donato A, Ceci P, Cannavo A, Tomei F, Naro F. Related Articles, Links Low power microwave interaction with phospholipase C and D signal Entrez PubMed transduction pathways in myogenic cells. Overview Cell Biol Int. 2004;28(10):683-8. Help I FAQ Tutorial PMID: 15516326 [PubMed - in process] New/Noteworthy 1 2: Chang WH, Chen LT, Sun JS, Lin FH. E-Utilities Related Articles, Links Effect of pulse-burst electromagnetic field stimulation on osteoblast cell **PubMed Services** activities. Journals Database Bioelectromagnetics. 2004 Sep;25(6):457-65. MeSH Database Single Citation Matcher PMID: 15300732 [PubMed - in process] **Batch Citation Matcher** Clinical Queries 3: Martin LJ, Persinger MA. Related Articles, Links LinkOut Thermal analgesia induced by 30-min exposure to 1 microT burst-firing Cubby magnetic fields is strongly enhanced in a dose-dependent manner by the Related Resources alpha2 agonist clonidine in rats. Order Documents Neurosci Lett. 2004 Aug 12;366(2):226-9. NLM Catalog PMID: 15276252 [PubMed - indexed for MEDLINE] **NLM Gateway** TOXNET 4: Kliukiene J, Tynes T, Andersen A. Related Articles, Links Consumer Health Clinical Alerts Residential and occupational exposures to 50-Hz magnetic fields and breast ClinicalTrials.gov cancer in women: a population-based study. PubMed Central Am J Epidemiol. 2004 May 1;159(9):852-61. PMID: 15105178 [PubMed - indexed for MEDLINE] 5: Sieron A, Cieslar G. Related Articles, Links [Application of variable magnetic fields in medicine--15 years experience] Wiad Lek. 2003;56(9-10):434-41. Review. Polish. PMID: 15049208 [PubMed - indexed for MEDLINE] 6: Aaron RK. Boyan BD. Ciombor DM, Schwartz Z, Simon BJ. Related Articles, Links Stimulation of growth factor synthesis by electric and electromagnetic fields. Clin Orthop. 2004 Feb; (419):30-7. Review. PMID: 15021128 [PubMed - indexed for MEDLINE] 7: Sun WJ. Fu YT, Lu DQ, Jiang H. Related Articles, Links [Superposition of noise magnetic fields inhibits clustering of fibroblast membrane surface receptors induced by 50 Hz magnetic fields in Chinese hamster lungs] Zhonghua Yu Fang Yi Xue Za Zhi. 2004 Jan;38(1):5-7. Chinese. PMID: 14989889 [PubMed - indexed for MEDLINE] 8: Gur E. Lerer B. van de Kar LD, Newman ME. Related Articles, Links Chronic rTMS induces subsensitivity of post-synaptic 5-HT1A receptors in

Int J Neuropsychopharmacol. 2004 Sep;7(3):335-40. Epub 2004 Jan 23.

PMID: 14741057 [PubMed - indexed for MEDLINE]

h cb hg e e e fcg e ch b e

rat hypothalamus.



h cb

h g

e

е

fcg

e ch

b e

Eur J Cancer Prev. 2003 Aug; 12(4):301-7. PMID: 12883383 [PubMed - indexed for MEDLINE] 18: Santini MT, Rainaldi G, Ferrante A, Indovina PL, Vecchia P, Related Articles, Links Donelli G. Effects of a 50 Hz sinusoidal magnetic field on cell adhesion molecule expression in two human osteosarcoma cell lines (MG-63 and Saos-2). Bioelectromagnetics. 2003 Jul;24(5):327-38. PMID: 12820290 [PubMed - indexed for MEDLINE] 19: Ciombor DM, Aaron RK, Wang S, Simon B. Related Articles, Links Modification of osteoarthritis by pulsed electromagnetic field--a morphological study. Osteoarthritis Cartilage. 2003 Jun;11(6):455-62. PMID: 12801485 [PubMed - indexed for MEDLINE] **20**: <u>Xu C, Loew LM.</u> Related Articles, Links Activation of phospholipase C increases intramembrane electric fields in N1E-115 neuroblastoma cells. Biophys J. 2003 Jun;84(6):4144-56. PMID: 12770917 [PubMed - indexed for MEDLINE] 21: Onodera H, Jin Z, Chida S, Suzuki Y, Tago H, Itoyama Y. Related Articles, Links Effects of 10-T static magnetic field on human peripheral blood immune cells. Radiat Res. 2003 Jun;159(6):775-9. PMID: 12751960 [PubMed - indexed for MEDLINE] 22: Johnson MT, McCullough J, Nindl G, Chamberlain JK. Related Articles, Links Autoradiographic evaluation of electromagnetic field effects on serotonin (5HT1A) receptors in rat brain. Biomed Sci Instrum. 2003;39:466-70. PMID: 12724937 [PubMed - indexed for MEDLINE] 23: Cohly HH, Abraham GE 3rd, Ndebele K, Jenkins JJ, Thompson J, Related Articles, Links Angel MF. Effects of static electromagnetic fields on characteristics of MG-63 osteoblasts grown in culture. Biomed Sci Instrum. 2003;39:454-9. PMID: 12724935 [PubMed - indexed for MEDLINE] 124: Saxena A, Jacobson J, Yamanashi W, Scherlag B, Lamberth J, Related Articles, Links Saxena B. A hypothetical mathematical construct explaining the mechanism of biological amplification in an experimental model utilizing picoTesla (PT) electromagnetic fields. Med Hypotheses. 2003 Jun;60(6):821-39. PMID: 12699707 [PubMed - indexed for MEDLINE] 1 25: Wolters A. Sandbrink F. Schlottmann A. Kunesch E. Stefan K. Related Articles, Links Cohen LG, Benecke R, Classen J. A temporally asymmetric Hebbian rule governing plasticity in the human motor cortex. J Neurophysiol. 2003 May;89(5):2339-45. Epub 2003 Jan 22. PMID: 12612033 [PubMed - indexed for MEDLINE] 26: Craviso GL., Poss J, Lanctot C, Lundback SS, Chatterjee I, Related Articles, Links Publicover NG. Intracellular calcium activity in isolated bovine adrenal chromaffin cells in

h cb hg e e e fcg e ch

the presence and absence of 60 Hz magnetic fields. Bioelectromagnetics. 2002 Dec;23(8):557-67. PMID: 12395410 [PubMed - indexed for MEDLINE] 7: Lin VW, Hsiao I, Kingery WS. Related Articles, Links High intensity magnetic stimulation over the lumbosacral spine evokes antinociception in rats. Clin Neurophysiol. 2002 Jul;113(7):1006-12. PMID: 12088693 [PubMed - indexed for MEDLINE] 1 28: Varani K, Gessi S, Merighi S, Iannotta V, Cattabriga E, Spisani S. Related Articles, Links Cadossi R, Borea PA. Effect of low frequency electromagnetic fields on A2A adenosine receptors = in human neutrophils. Br J Pharmacol. 2002 May; 136(1):57-66. PMID: 11976268 [PubMed - indexed for MEDLINE] 1 29: Kaelin-Lang A, Luft AR, Sawaki L, Burstein AH, Sohn YH, Cohen Related Articles, Links LG. Modulation of human corticomotor excitability by somatosensory input. J Physiol. 2002 Apr 15;540(Pt 2):623-33. PMID: 11956348 [PubMed - indexed for MEDLINE] 130: Min YS, Jeong JH, Choi YM, Lee BC, Huh IH, Lee SY, Sohn UD. Related Articles, Links The influences of extremely low frequency magnetic fields on clonidine-induced sleep in 2-day-old chicks. J Auton Pharmacol. 2001 Aug;21(4):197-203. PMID: 11952875 [PubMed - indexed for MEDLINE] 31: Sieron A, Brus R. Szkilnik R, Plech A, Kubanski N, Cieslar G. Related Articles, Links Influence of alternating low frequency magnetic fields on reactivity of central dopamine receptors in neonatal 6-hydroxydopamine treated rats. Bioelectromagnetics. 2001 Oct;22(7):479-86. PMID: 11568933 [PubMed - indexed for MEDLINE] 1 32: Boscol P, Di Sciascio MB, D'Ostilio S, Del Signore A, Reale M, Related Articles, Links Conti P, Bayazzano P, Paganelli R, Di Gioacchino M. Effects of electromagnetic fields produced by radiotelevision broadcasting stations on the immune system of women. Sci Total Environ. 2001 Jun 12;273(1-3):1-10. PMID: 11419593 [PubMed - indexed for MEDLINE] 133: Van Wijngaarden E, Nylander-French LA, Millikan RC, Savitz Related Articles, Links DA, Loomis D. Population-based case-control study of occupational exposure to electromagnetic fields and breast cancer. Ann Epidemiol. 2001 Jul;11(5):297-303. PMID: 11399443 [PubMed - indexed for MEDLINE] 34: Shibaji T, Yasuhara Y, Oda N, Umino M. Related Articles, Links A mechanism of the high frequency AC iontophoresis. J Control Release. 2001 May 18;73(1):37-47. PMID: 11337058 [PubMed - indexed for MEDLINE] 35: Yamasaki T, Tamai I, Matsumura Y. Related Articles, Links Activation of histamine H3 receptors inhibits renal noradrenergic neurotransmission in anesthetized dogs. Am J Physiol Regul Integr Comp Physiol. 2001 May;280(5):R1450-6.

h cb hg e e e fcg e ch b e

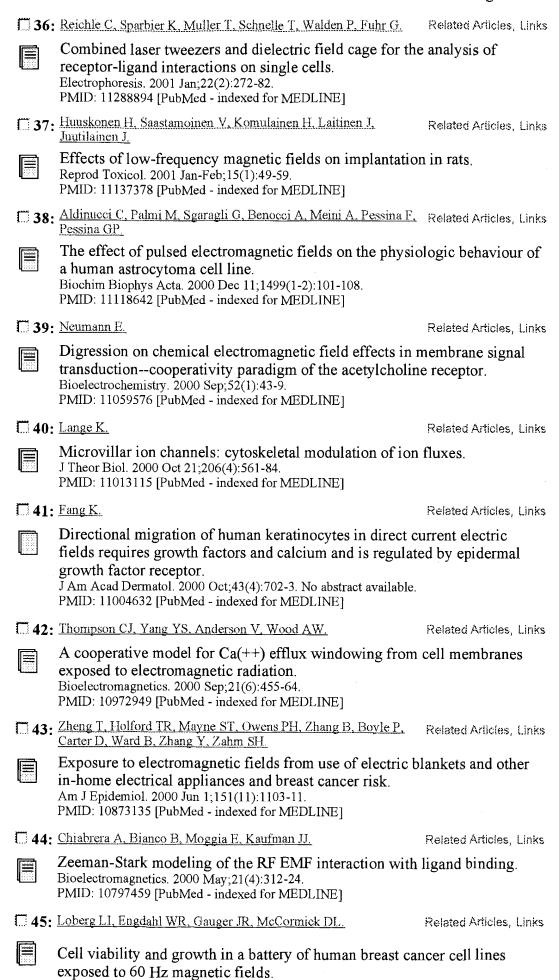
PMID: 11294767 [PubMed - indexed for MEDLINE]

h g

cb

h

fcg



b e

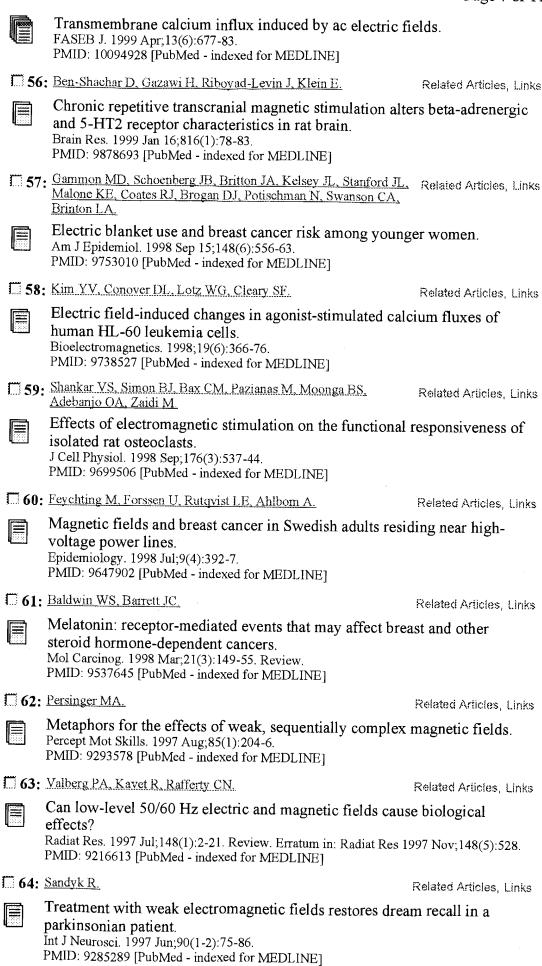
e ch

Related Articles, Links

Radiat Res. 2000 May; 153(5 Pt 2):725-8. PMID: 10790299 [PubMed - indexed for MEDLINE] 46: Massot O, Grimaldi B. Bailly JM, Kochanek M, Deschamps F, Related Articles, Links Lambrozo J, Fillion G. Magnetic field desensitizes 5-HT(1B) receptor in brain: pharmacological and functional studies. Brain Res. 2000 Mar 6;858(1):143-50. PMID: 10700607 [PubMed - indexed for MEDLINE] 17: Sandyk R. Related Articles, Links Yawning and stretching induced by transcranial application of AC pulsed electromagnetic fields in Parkinson's disease. Int J Neurosci. 1999 Mar; 97(1-2):139-45. PMID: 10681123 [PubMed - indexed for MEDLINE] 48: Forssen UM, Feychting M, Rutqvist LE, Floderus B, Ahlbom A. Related Articles, Links Occupational and residential magnetic field exposure and breast cancer in females. Epidemiology. 2000 Jan;11(1):24-9. PMID: 10615839 [PubMed - indexed for MEDLINE] 49: Conti P, Reale M, Grilli A, Barbacane RC, Di Luzio S, Di Related Articles, Links Gioacchino M. De Lutiis MA. Felaco M. Effect of electromagnetic fields on several CD markers and transcription and expression of CD4. Immunobiology. 1999 Sep;201(1):36-48. PMID: 10532279 [PubMed - indexed for MEDLINE] ☐ **50**: Sandyk R. Related Articles, Links AC pulsed electromagnetic fields-induced sexual arousal and penile erections in Parkinson's disease. Int J Neurosci. 1999 Aug;99(1-4):139-49. PMID: 10495212 [PubMed - indexed for MEDLINE] 51: Loberg LI, Gauger JR, Buthod JL, Engdahl WR, McCormick DL. Related Articles, Links Gene expression in human breast epithelial cells exposed to 60 Hz magnetic Carcinogenesis. 1999 Aug;20(8):1633-6. PMID: 10426819 [PubMed - indexed for MEDLINE] 52: Fang KS, Ionides E, Oster G, Nuccitelli R, Isseroff RR Related Articles, Links Epidermal growth factor receptor relocalization and kinase activity are necessary for directional migration of keratinocytes in DC electric fields. J Cell Sci. 1999 Jun;112 (Pt 12):1967-78. PMID: 10341215 [PubMed - indexed for MEDLINE] 53: Kheifets LI, Matkin CC. Related Articles, Links Industrialization, electromagnetic fields, and breast cancer risk. Environ Health Perspect. 1999 Feb; 107 Suppl 1:145-54. Review. PMID: 10229714 [PubMed - indexed for MEDLINE] 54: Mullins JM, Penafiel LM, Juutilainen J, Litovitz TA Related Articles, Links Dose-response of electromagnetic field-enhanced ornithine decarboxylase activity. Bioelectrochem Bioenerg. 1999 Feb;48(1):193-9. PMID: 10228587 [PubMed - indexed for MEDLINE]

h cb hg e e e fcg e ch b e

55: Cho MR, Thatte HS, Silvia MT, Golan DE.



 $h \hspace{1.5cm} cb \hspace{1.5cm} h \hspace{1.5cm} g \hspace{1.5cm} e \hspace{1.5cm} e \hspace{1.5cm} e \hspace{1.5cm} ch \hspace{1.5cm} b \hspace{1.5cm} e$ 

cb

h g

e e

fcg

e

65: Lyle DB, Fuchs TA, Casamento JP, Davis CC, Swicord ML. Related Articles, Links Intracellular calcium signaling by Jurkat T-lymphocytes exposed to a 60 Hz magnetic field. Bioelectromagnetics. 1997;18(6):439-45. PMID: 9261541 [PubMed - indexed for MEDLINE] 66: Thomas AW, Kavaliers M, Prato FS, Ossenkopp KP. Related Articles, Links Pulsed magnetic field induced "analgesia" in the land snail, Cepaea nemoralis, and the effects of mu, delta, and kappa opioid receptor agonists/antagonists. Peptides. 1997;18(5):703-9. PMID: 9213364 [PubMed - indexed for MEDLINE] 67: Beech JA. Related Articles, Links Bioelectric potential gradients may initiate cell cycling: ELF and zeta potential gradients may mimic this effect. Bioelectromagnetics. 1997;18(5):341-8. Review. PMID: 9209715 [PubMed - indexed for MEDLINE] 68: Dees C. Garrett S. Henley D. Travis C. Related Articles, Links Effects of 60-Hz fields, estradiol and xenoestrogens on human breast cancer Radiat Res. 1996 Oct; 146(4): 444-52. PMID: 8927716 [PubMed - indexed for MEDLINE] 69: Sandyk R. Related Articles, Links Bidirectional effect of electromagnetic fields on ketanserin-induced yawning in patients with multiple sclerosis: the role of melatonin. Int J Neurosci. 1996 Mar,85(1-2):93-9. PMID: 8727685 [PubMed - indexed for MEDLINE] 70: Sandyk R. Related Articles, Links Effects of picotesla flux electromagnetic fields on dopaminergic transmission in Tourette's syndrome. Int J Neurosci. 1996 Feb;84(1-4):187-94. Review. PMID: 8707481 [PubMed - indexed for MEDLINE] 71: Maggi CA, Giuliani S, Zagorodnyuk V. Related Articles, Links Calcitonin gene-related peptide (CGRP) in the circular muscle of guineapig colon: role as inhibitory transmitter and mechanisms of relaxation. Regul Pept. 1996 Jan 16;61(1):27-36. PMID: 8701024 [PubMed - indexed for MEDLINE] 72: Fleischmann A, Sternheim A, Etgen AM, Li C, Grisaru N, Related Articles, Links Belmaker RH Transcranial magnetic stimulation downregulates beta-adrenoreceptors in J Neural Transm. 1996;103(11):1361-6. PMID: 9013422 [PubMed - indexed for MEDLINE] 73: Kavet R Related Articles, Links EMF and current cancer concepts. Bioelectromagnetics. 1996;17(5):339-57. Review. PMID: 8915543 [PubMed - indexed for MEDLINE] 74: Vischer HA. Related Articles, Links

Electroreceptor development in the electric fish Eigenmannia: a histological

b е

e ch

cb

h g

e fcg

e ch

		1 486 > 01 11
	and ultrastructural study. J Comp Neurol. 1995 Sep 11;360(1):81-100. PMID: 7499567 [PubMed - indexed for MEDLINE]	
□ 75	Schafer SS.	Related Articles, Links
	Oscillations in the discharge frequency of cat primary rafferents during the dynamic phase of a ramp-and-hold Brain Res. 1995 Jul 17;686(1):61-9. PMID: 7583272 [PubMed - indexed for MEDLINE]	nuscle spindle stretch.
<b>1</b> 76	: Fitzsimmons RJ, Ryaby JT, Magee FP, Baylink DJ.	Related Articles, Links
	IGF-II receptor number is increased in TE-85 osteosarc combined magnetic fields.  J Bone Miner Res. 1995 May;10(5):812-9.  PMID: 7639117 [PubMed - indexed for MEDLINE]	
□ 77	: Murthy KK, Rogers WR, Smith HD.	Related Articles, Links
	Initial studies on the effects of combined 60 Hz electric exposure on the immune system of nonhuman primates. Bioelectromagnetics. 1995; Suppl 3:93-102. PMID: 8787569 [PubMed - indexed for MEDLINE]	and magnetic field
□ 78	Eichwald C. Kaiser F.	Related Articles, Links
	Model for external influences on cellular signal transduction including cytosolic calcium oscillations.  Bioelectromagnetics. 1995;16(2):75-85.  PMID: 7612029 [PubMed - indexed for MEDLINE]	ction pathways
T 79	Sandyk R, Jacono RP	Related Articles, Links
	Naltrexone attenuates the antiparkinsonian effects of pic magnetic fields. Int J Neurosci. 1994 Sep;78(1-2):111-22. PMID: 7829285 [PubMed - indexed for MEDLINE]	coTesla range
₩ 80	Beech JA.	Related Articles, Links
	Carcinogenesis and initiation of cell cycling by charge-iclusters may be due to mitogen receptors and Na+/H+ and Med Hypotheses. 1994 Jun;42(6):385-9. PMID: 7935086 [PubMed - indexed for MEDLINE]	nduced membrane ntiports.
□ 81:	Leech D, Rechnitz GA.	Related Articles, Links
	Biomagnetic neurosensors. Anal Chem. 1993 Nov 15;65(22):3262-6. PMID: 8291676 [PubMed - indexed for MEDLINE]	
□ 82:	Hamano T, Kaji R, Diaz AF, Kohara N, Takamatsu N, Uchiyama T, Shibasaki H, Kimura J.	Related Articles, Links
	Vibration-evoked sensory nerve action potentials derived corpuscles. Electroencephalogr Clin Neurophysiol. 1993 Aug;89(4):278-86. PMID: 7688692 [PubMed - indexed for MEDLINE]	d from Pacinian
□ 83:	Fields RD, Bullock TH, Lange GD.	Related Articles, Links
	Ampullary sense organs, peripheral, central and behavior in chimeras (Hydrolagus, Holocephali, Chondrichthyes). Brain Behav Evol. 1993;41(6):269-89. PMID: 8391892 [PubMed - indexed for MEDLINE]	ral electroreception

□ 8	4: Lee RC, Gowrishankar TR, Basch RM, Patel PK, Golan DE	Related Articles, Links
	Cell shape-dependent rectification of surface receptor to sinusoidal electric field. Biophys J. 1993 Jan;64(1):44-57. PMID: 8381681 [PubMed - indexed for MEDLINE]	cransport in a
<b>5</b> 8	5: Sandyk R.	Related Articles, Links
	Weak magnetic fields antagonize the effects of melator levels in Parkinson's disease. Int J Neurosci. 1993 Jan;68(1-2):85-91. PMID: 8063518 [PubMed - indexed for MEDLINE]	nin on blood glucose
□ 80	Enin LD, Akoev GN, Potekhina IL, Oleiner VD.	Related Articles, Links
	[Effect of extremely high-frequency electromagnetic rafunction of skin sensory endings] Patol Fiziol Eksp Ter. 1992 Sep-Dec;(5-6):23-5. Russian. PMID: 1302819 [PubMed - indexed for MEDLINE]	diation on the
87	: Grous M, Ormsbee H 3rd, Barnette M.	Related Articles, Links
	Dimethylphenylpiperazinium (DMPP)-induced relaxati cyclic GMP content in canine lower esophageal sphinot Biochem Pharmacol. 1990 Oct 15;40(8):1757-62. PMID: 1978676 [PubMed - indexed for MEDLINE]	on and elevation of ter (LES).
□ 88	: Zagorskaia EA, Klimovitskii VIa, Mel'nichenko VP, Rodina GP, Semenov SN.	Related Articles, Links
	[Effect of low-frequency electromagnetic fields on the is systems of the body] Kosm Biol Aviakosm Med. 1990 May-Jun;24(3):3-11. Review. Ru PMID: 2197500 [PubMed - indexed for MEDLINE]	
<b>□ 8</b> 9	: Satake T.	Related Articles, Links
	[Effect of pulsed electromagnetic fields (PEMF) on oster Alterations of intracellular Ca2+] Kanagawa Shigaku. 1990 Mar;24(4):692-701. Japanese. PMID: 2133739 [PubMed - indexed for MEDLINE]	eoblast-like cells.
□ 90	LaPorte R, Kus L, Wisniewski RA, Prechel MM, Azar-Kia B, McNulty JA.	Related Articles, Links
	Magnetic resonance imaging (MRI) effects on rat pineal function.	l neuroendocrine
	Brain Res. 1990 Jan 8;506(2):294-6. PMID: 2154286 [PubMed - indexed for MEDLINE]	
□91	Brain Res. 1990 Jan 8;506(2):294-6.	Related Articles, Links
□ 91	Brain Res. 1990 Jan 8;506(2):294-6. PMID: 2154286 [PubMed - indexed for MEDLINE]  Cossarizza A, Monti D, Bersani F, Paganelli R, Montagnani G,	Related Articles, Links
	Brain Res. 1990 Jan 8;506(2):294-6. PMID: 2154286 [PubMed - indexed for MEDLINE]  Cossarizza A. Monti D. Bersani F. Paganelli R. Montagnani G. Cadossi R. Cantini M. Franceschi C.  Extremely low frequency pulsed electromagnetic fields interleukin-2 (IL-2) utilization and IL-2 receptor express stimulated human lymphocytes from old subjects. FEBS Lett. 1989 May 8;248(1-2):141-4.	Related Articles, Links
	Brain Res. 1990 Jan 8;506(2):294-6. PMID: 2154286 [PubMed - indexed for MEDLINE]  Cossarizza A, Monti D, Bersani F, Paganelli R, Montagnani G, Cadossi R, Cantini M, Franceschi C.  Extremely low frequency pulsed electromagnetic fields interleukin-2 (IL-2) utilization and IL-2 receptor express stimulated human lymphocytes from old subjects. FEBS Lett. 1989 May 8;248(1-2):141-4.  PMID: 2785933 [PubMed - indexed for MEDLINE]	Related Articles, Links increase sion in mitogen-

e fcg

e ch

b e

cb

h g

	Neurochem Res. 1988 Jul;13(7):671-7. Review. PMID: 3045687 [PubMed - indexed for MEDLINE]	ancer promotion.
□94:	Adey WR.	Related Articles, Links
	The cellular microenvironment and signaling through ce Prog Clin Biol Res. 1988;257:81-106. Review. PMID: 3278330 [PubMed - indexed for MEDLINE]	
□ 95:	Stehle J. Reuss S, Schroder H, Henschei M, Vollrath L.	Related Articles, Links
	Magnetic field effects on pineal N-acetyltransferase active content in the gerbilrole of pigmentation and sex. Physiol Behav. 1988;44(1):91-4. PMID: 3237820 [PubMed - indexed for MEDLINE]	vity and melatonin
□ 96:	Beason RC, Semm P.	Related Articles, Links
	Magnetic responses of the trigeminal nerve system of the (Dolichonyx oryzivorus).  Neurosci Lett. 1987 Sep 23;80(2):229-34.  PMID: 3683981 [PubMed - indexed for MEDLINE]	
□ 97:	Semm P. Demaine C.	Related Articles, Links
	Neurophysiological properties of magnetic cells in the pig system. J Comp Physiol [A]. 1986 Nov;159(5):619-25. PMID: 3806432 [PubMed - indexed for MEDLINE]	geon's visual
□ 98:	Vilches-Troya J. Dunn RF, O'Leary DP.	Related Articles, Links
<u>(IIII)</u>	Relationship of the vestibular hair cells to magnetic partic of the guitarfish sacculus. J Comp Neurol. 1984 Jul 10;226(4):489-94. PMID: 6611358 [PubMed - indexed for MEDLINE]	
□ 99:	Chiabrera A, Grattarola M, Viviani R.	Related Articles, Links
4	Interaction between electromagnetic fields and cells: micreffect on ligands and surface receptors. Bioelectromagnetics. 1984;5(2):173-91. PMID: 6732874 [PubMed - indexed for MEDLINE]	•
Display	Summary Show: 500 Sort Se	nd to Text 🗻

Write to the Help Desk

NCBI | NLM | NIH

Department of Health & Human Services

Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50





Entrez	PubMed	Nucleotide	Protein	Genome	Structure	OMIM	PMC	Journals	Books
Search	PubMed	for	1			_	Go	Clear	
		Limits		w/Index	History	Clip	board	Detail	S
About Entr	ez	Display Abst	ract	* S	how: 20	Sort	→ Sen	d to Text	

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

**PubMed Services** Journals Database MeSH Database Single Citation Matcher Batch Citation Matcher Clinical Queries LinkOut Cubby

Related Resources Order Documents NLM Catalog **NLM Gateway** TOXNET Consumer Health Clinical Alerts ClinicalTrials.gov PubMed Central

1: Bioelectromagnetics. 2004 Sep;25(6):457-65.

Related Articles, Links

InterScience

Effect of pulse-burst electromagnetic field stimulation on osteoblast cell activities.

Chang WH, Chen LT, Sun JS, Lin FH.

Department of Biomedical Engineering, Chung-Yuan Christian University, Zhong-Li, Tao-Yuan, Taiwan, China.

Electric stimulation has been used successfully to treat a wide range of bone disorders. However, the mechanism by which the electric fields can influence the bone cells behavior remains poorly understood. The purpose of this research was to assess the possible mechanism of the stimulatory effect of pulsed electromagnetic field (PEMF) on bone cells. A PEMF with a frequency of 15 Hz (1 G [0.1 mT]; electric field strength 2 mV/cm) were applied to neonatal mouse calvarial bone cell cultures for 14 days. The temporal effects of PEMF on the osteoblasts were evaluated by the status of proliferation, differentiation, mineralization, and gene expression on the 3rd, 5th, 7th, and 14th days of culture. Our results demonstrated that PEMF stimulation significantly increased the osteoblasts' proliferation by 34.0, 11.5, and 13.3% over the control group after 3, 5, and 7 days' culture. Although the alkaline phosphatase (ALP) staining and the mineralization nodules formation did not change, the ALP activity of the bone cells decreased significantly after PEMF stimulation. Under the PEMF stimulation, there was no effect on the extracellular matrix synthesis, while the osteoprotegerin (OPG) mRNA expression was up regulated and the receptor activator of NF-kappaB ligand (RANKL) mRNA expression were down regulated, compared to the control. In conclusion, the treatment by PEMF of osteoblasts may accelerate cellular proliferation, but did not affect the cellular differentiation. The effect of PEMF stimulation on the bone tissue formation was most likely associated with the increase in the number of cells, but not with the enhancement of the osteoblasts' differentiation.

PMID: 15300732 [PubMed - in process]

Display Abstract	Show:	20 💌	Sort	Send to Text •

Write to the Help Desk NCBI NLM I NIH Department of Health & Human Services Privacy Statement | Freedom of Information Act | Disclaimer

bе

b

Related Articles, Links







				. **					
Entrez	PubMed	Nucleotide	Protein	Genome	Structure	OMIM	PMC	Journals	Books
Search	PubMed	for					Go	Clear	
		Limits	Previe	w/Index	History	Clip	board	Details	3
About Ent	rez	<b>Display</b> Abstra	act	<b>S</b> S	Show: 20 💌	Sort	Sen	to Text	
Text Versi	on	□1: Bioelectro	magnetic	cs. 1984;5(	2):173-91.		R	elated Articles.	Links

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services Journals Database MeSH Database Single Citation Matcher Batch Citation Matcher Clinical Queries LinkOut Cubby

Related Resources Order Documents **NLM Catalog NLM Gateway** TOXNET Consumer Health Clinical Alerts ClinicalTrials.gov PubMed Central

Interaction between electromagnetic fields and cells: microelectrophoretic effect on ligands and surface receptors.

Chiabrera A, Grattarola M, Viviani R.

The aggregation between lectins and lymphocyte surface receptors can be affected strongly by a low-level electric field induced in the cell suspension by a time-varying magnetic field. One of the possible mechanisms is the microelectrophoretic effect due to the electric field, which influences the distance (in the mean square sense) between charged ligands and receptors when they are about to separate. On a purely theoretical basis, it is shown that, at low frequencies, an externally induced periodic electric field always decreases the mean lifetime of ligand-receptor complexes. As a consequence, the mitogenic gain obtained by lectin addition to cell suspension is decreased. These results suggest that such a mechanism, if effective, reduces the lectin mitogenic capability and offers a way of handling similar phenomena which have been described for other biological systems.

PMID: 6732874 [PubMed - indexed for MEDLINE]

Display Abstract	Show:	20 🕶	Sort 💌	Send to Text 💌
------------------	-------	------	--------	----------------

Write to the Help Desk NCBI | NLM | NIH Department of Health & Human Services Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50

h

cb

h g e fcg c

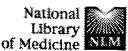
b

C

Related Articles, Links







				***				<del>-</del>	
Entrez	PubMed	Nucleotide	Protein	Genome	Structure	OMIM	PMC	Journals	Books
Search	PubMed	for				**********************	Go	Clear	
		Limits		w/Index	History		board	Details	į
About Ent	fez	Display Abstr	act	× S		ort	Send	to Text	¥
Text Versi	on	□1: Physiol B	ehav. 198	38;44(1):91	-4.		R	elated Articles.	Links

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services Journals Database MeSH Database Single Citation Matcher Batch Citation Matcher **Clinical Quaries** LinkOut Cubby

Related Resources Order Documents NLM Catalog NLM Gateway TOXNET Consumer Health Clinical Alerts ClinicalTrials.gov PubMed Central

Magnetic field effects on pineal N-acetyltransferase activity and melatonin content in the gerbil--role of pigmentation and sex.

Stehle J, Reuss S, Schroder H, Henschel M, Vollrath L.

Department of Anatomy, University of Mainz, Federal Republic of Germany.

The ambient geomagnetic field influences a variety of biological phenomena. Electrical and biochemical parameters of the rodent pineal gland are influenced by the alteration of weak magnetic fields (MF), the magnetic receptor probably residing in the retina. However, open questions concern the role of retinal pigmentation as well as species- and sex-specific differences in MF perception. We therefore exposed male and female naturally pigmented and albino Mongolian gerbils, as well as Sprague-Dawley (SD) rats to a 60 degrees rotation of the horizontal component of the ambient MF. Alteration of nocturnal pineal melatonin content and N-acetyltransferase (NAT) activity were utilized as a parameter for assessing magneto-sensitivity. In pigmented gerbils, MF exposure resulted in no significant changes in pineal melatonin synthesis. In contrast, albino gerbils and SD rats exhibited--regardless of sex-significant decreases in pineal NAT activity and melatonin content following MF exposure. These results suggest that in rodents hypopigmentation appears to favor magnetoperception. The available evidence indicates that the pigmentation of the retina could play a crucial role.

PMID: 3237820 [PubMed - indexed for MEDLINE]

***************************************				
Display Abstract	~.	20	0-4	Send to Text +

Write to the Help Desk NCBI | NLM | NIH Department of Health & Human Services Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50

h

cb

h g fcg c e e e

b

C







Entrez	PubMed	Nucleotide	Protein	Genome	Structure	OMIM	PMC	Journals	Books
Search	PubMed		for				Go	Clear	
		Limits		w/Index	History	Clipl	ooard	Details	
About Entr	'ez	Display A	Abstract	C1	now: 20 💌 So	rt	Sen	d to Text	

E-Utilities

1: Magn Reson Med. 1989 May;10(2):241-5.

Related Articles, Links

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy

PubMed Services Journals Database MeSH Database Single Citation Matcher Batch Citation Matcher Clinical Queries LinkOut Cubby

Related Resources Order Documents **NLM Catalog NLM Gateway** TOXNET Consumer Health Clinical Alerts ClinicalTrials.gov PubMed Central

## Magnetic field modulation of receptor binding.

Chiles C, Hawrot E, Gore J, Byck R.

Department of Psychiatry, Yale University School of Medicine, New Haven, Connecticut 06510.

Although it is widely held that the magnetic fields encountered during magnetic resonance imaging (MRI) and other procedures have no discernible effect on biological systems, we find that at early times of incubation, the amount of binding of the neurotoxin, alpha-bungarotoxin, to nicotinic acetylcholine receptor is significantly reduced in a constant 2.0-T magnetic field. This finding suggests that steady magnetic fields can directly affect the functional activity of biologically important macromolecules, in this particular case a neurotransmitter receptor.

PMID: 2761382 [PubMed - indexed for MEDLINE]

Display Abstract •	CI.	20 💌	Sort ₩	Send to Text •
--------------------	-----	------	--------	----------------

Write to the Help Desk NCBI | NLM | NIH Department of Health & Human Services Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50

h

cb

h g fcg c

b e b







Entrez PubMed Nucleotide Protein Genome Structure MIMO PMC Journals Books Search | PubMed for Go Clear Limits Preview/Index History Clipboard Details Display Abstract Show: 20 ★ Sort Send to Text About Entrez

Text Version

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy

E-Utilities

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
LinkOut
Cubby

Related Resources
Order Documents
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

□1: FEBS Lett. 1989 May 8;248(1-2):141-4.

Related Articles, Links

Extremely low frequency pulsed electromagnetic fields increase interleukin-2 (IL-2) utilization and IL-2 receptor expression in mitogen-stimulated human lymphocytes from old subjects.

Cossarizza A, Monti D, Bersani F, Paganelli R, Montagnani G, Cadossi R. Cantini M, Franceschi C.

Institute of General Pathology, University of Modena, Italy.

The effects of the exposure of mitogen-stimulated human lymphocytes from aged subjects to low-frequency pulsed electromagnetic fields (PEMFs) were studied by measuring the production of interleukin-2 (IL-2) and the expression of IL-2 receptor. PEMF-exposed cultures that presented increased [3H] thymidine incorporation showed lower amounts of IL-2 in their supernatants, but higher percentages of IL-2 receptor-positive cells and of T-activated lymphocytes. Taken together, these data suggest that PEMFs were able to modulate mitogen-induced lymphocyte proliferation by provoking an increase in utilization of IL-2, most likely acting on the expression of its receptor on the plasma membrane.

PMID: 2785933 [PubMed - indexed for MEDLINE]

Display Abstract +	Show:	20	Sort •	Send to	Text 🐷
	BHOW.	1	1 - 0		I EXL

Write to the Help Desk

NCBI | NLM | NIH

Department of Health & Human Services

Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50







				75					
Entrez	PubMed	Nucleotide	Protein	Genome	Structure	OMIMO	PMC	Journals	Book
Search	PubMed	for					Go	Clear	
		Limits	Previe	w/Index	History	Clip	board	Details	;
About Entr	0Z	Display Absti	ract	SI SI	100 0001	Sort	Som.	to Text	

1: Kanagawa Shigaku. 1990 Mar;24(4):692-701.

Related Articles, Links

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
LinkOut

Related Resources
Order Documents
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

Cubby

## [Effect of pulsed electromagnetic fields (PEMF) on osteoblast-like cells. Alterations of intracellular Ca2+]

[Article in Japanese]

Satake T.

Department of Oral Biochemistry, Kanagawa Dental College.

Low-energy electromagnetic fields pulsed at frequencies of 60-90 Hz significantly increase healing of chronic fracture nonunions in man. These fields are effective at tissue current levels as low as several orders of magnitude lower than those required for transmembrane depolarization of normal cells. In this study, the effects of PEMF on culture of rat osteoblastlike cells have been examined. The PEMF promoted the growth of these cells, were also found to increase the basal level of [Ca2+]i, and to decrease the responses towards epidermal growth factor (EGF) and serum, when the degree of response was based on the intracellular Ca2+ transient. These effects of PEMF were mimicked by 12-O-tetradecanoyl phorbol 13-acetate (TPA), a potent activator of protein kinase C. Pretreatment of TPA enhanced the cell growth and suppressed the intracellular Ca2+ transient induced with EGF and then serum to about 170% of the control. Then, present study investigated how the PEMF and TPA modulate EGF receptors of these cells. Both PEMF and TPA decreased the level of EGF binding to these cells down to about 65% and 75%, respectively. Scatchard analysis revealed the decrease of EGF receptor without a significant change in the affinity for EGF by both. In conclusion, it was indicated that PEMF acts at cell membrane and modulates the receptors which is essential for cell growth and DNA synthesis.

PMID: 2133739 [PubMed - indexed for MEDLINE]

Display Abstract	Show: 20	Sort	Send to Text →

Write to the Help Desk

NCBI | NLM | NIH

Department of Health & Human Services

Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50

e e







						25.00 V.	******		
Entrez	PubMed	Nucleotide	Protein	Genoms	Structure	OMIM	PMC	Journals	Books
Search Pu	bMed	for				***************************************	Go	Clear	2012,00
		Limits		w/Index	History		board	Details	
About Entrez		Display Abstra	act	S	Show: 20 So	rt	<ul> <li>Send</li> </ul>	to Text	

1: J Bone Miner Res. 1995 May;10(5):812-9.

Related Articles, Links

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
LinkOut
Cubby

Related Resources
Order Documents
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

IGF-II receptor number is increased in TE-85 osteosarcoma cells by combined magnetic fields.

Fitzsimmons RJ, Ryaby JT, Magee FP, Baylink DJ.

Department of Research, Jerry L. Pettis Memorial VA Hospital, Loma Linda, California, USA.

Human osteosarcoma-derived osteoblast-like cells, TE-85, were used to assess the effect of a low frequency alternating magnetic field in combination with a controlled static magnetic field (combined magnetic fields, CMF) on insulinlike growth factor receptor regulation. In our culture system, application of a 15.3 Hz CMF induces a calculated maximum electrical potential in the culture media of 10(-5) V/m. Initial characterization of TE-85 cells demonstrated that (a) TE-85 cells contain both type I insulin-like growth factor (IGF-I) and IGF-II receptors and (b) dose dependence for IGF-stimulated cell proliferation were comparable to the affinities of the IGF's binding to membrane binding sites (i.e., receptors had dissociation constants in the low nanomolar concentration range). The studies with CMF exposure revealed that CMF treatment for 30 minutes increased the number of IGF-II receptors in a frequency-dependent manner without affecting the number of IGF-I receptors. The CMF-dependent increase in IGF-II receptor number was associated with a significant increase in the IGF-II dissociation constant. These results indicate that a membrane receptor levels can be altered by short-term exposure to lowenergy, low-frequency electromagnetic fields and suggest a potential biochemical mechanism for electromagnetic effects on bone formation and remodeling.

PMID: 7639117 [PubMed - indexed for MEDLINE]

Display Abstract	Show: 20 Sort	

Write to the Help Desk

NCBI | NLM | NIH

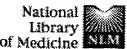
Department of Health & Human Services

Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50







				,		2. 10 M. W.	J-14-4-W-J-1		
Entrez	PubMed	Nucleotide	Protein	Genome	Structure		PMC	Journals	Books
Search	PubMed	for		***************************************	•••••••••••••••••••••••••••••••••••••••		Go	Clear	
		Limits	Previe	w/Index	History	Clipbo		Details	i i
About Entr	201	Display Abstr	act	Sł	10w: 20	Sort	Sen	d to Text	

1: Biomed Sci Instrum. 2003;39:454-9.

Related Articles, Links

Entrez PubMed Overview Help I FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services Journals Database MeSH Database Single Citation Matcher Batch Citation Matcher Clinical Queries LinkOut Cubby

Related Resources Order Documents **NLM Catalog** NLM Gateway TOXNET Consumer Health Clinical Alerts ClinicalTrials.gov PubMed Central

Effects of static electromagnetic fields on characteristics of MG-63 osteoblasts grown in culture.

Cohly HH, Abraham GE 3rd, Ndebele K, Jenkins JJ, Thompson J, Angel MF.

Division of Plastic Surgery, Division of Rheumatology/Molecular Immunology, University of Mississippi Medical Center, Jackson, MS 39216-4505, USA. hcohly@surgery.umsmed.edu

The effects of static electromagnetic fields (SEFs) on MG-63, a human osteoblast cell-line, were investigated. We examined proliferation, proline uptake and gene expression in an SEF approximately 1/728th the intensity of those previously reported. Cells were placed within an SEF apparatus (average field intensity of 0.618mT) with appropriate controls. Proliferation was measured by 3H-thymidine incorporation and showed a 34% decrease in cells exposed to SEF (P = .0001; N = 3). Proline, a major component of collagen necessary for bone formation by osteoblasts, incorporation was reduced 37% (P = 0.006; N = 3). Reverse-transcription-polymerase chain reaction revealed that collagen I, alkaline phosphatase, parathyroid hormone-receptor, and osteocalcin mRNA's were down regulated with the low intensity SEF. Exposure to very low SEFs affects the MG-63 osteoblasts in a manner that may be detrimental to bone formation.

PMID: 12724935 [PubMed - indexed for MEDLINE]

Display Abstract •	Show: 20 Sort	Send to Text -
--------------------	---------------	----------------

Write to the Help Desk NCBI | NLM | NIH Department of Health & Human Services Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50

h

h g e fcg c

b

b С







Entrez	PubMed	Nucleotide	Profein	Genome	Structure	OMIM	PMC	Journals	Book
Search	PubMed	for			***************************************		Gol	Clear	2000
		Limits		w/Index	History		oboard	Detail	ş
About Ent	rez	Uisplay Absti	ract	s	show: 20	Sort	▼ Sen	d to Text	

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

**PubMed Services** Journals Database MeSH Database Single Citation Matcher Batch Citation Matcher Clinical Queries LinkOut Cubby

Related Resources Order Documents **NLM Catalog** NLM Gateway TOXNET Consumer Health Clinical Alerts ClinicalTrials.gov PubMed Central

1: Osteoarthritis Cartilage. 2003 Jun;11(6):455-62.

Related Articles, Links

## FULL-TEXT ARTICLE

Modification of osteoarthritis by pulsed electromagnetic field--a morphological study.

Ciombor DM, Aaron RK, Wang S, Simon B.

Department of Orthopaedics, Brown Medical School, Providence, RI 02906, USA.

OBJECTIVE: Hartley guinea pigs spontaneously develop arthritis that bears morphological, biochemical, and immunohistochemical similarities to human osteoarthritis. It is characterized by the appearance of superficial fibrillation by 12 months of age and severe cartilage lesions and eburnation by 18 months of age. This study examines the effect of treatment with a pulsed electromagnetic field (PEMF) upon the morphological progression of osteoarthritis in this animal model. DESIGN: Hartley guinea pigs were exposed to a specific PEMF for 1h/day for 6 months, beginning at 12 months of age. Control animals were treated identically, but without PEMF exposure. Tibial articular cartilage was examined with histological/histochemical grading of the severity of arthritis, by immunohistochemistry for cartilage neoepitopes, 3B3(-) and BC-13, reflecting enzymatic cleavage of aggrecan, and by immunoreactivity to collagenase (MMP-13) and stromelysin (MMP-3). Immunoreactivity to TGFbeta, interleukin (IL)-1beta, and IL receptor antagonist protein (IRAP) antibodies was examined to suggest possible mechanisms of PEMF activity. RESULTS: PEMF treatment preserves the morphology of articular cartilage and retards the development of osteoarthritic lesions. This observation is supported by a reduction in the cartilage neoepitopes, 3B3(-) and BC-13, and suppression of the matrix-degrading enzymes, collagenase and stromelysin. Cells immunopositive to IL-1 are decreased in number, while IRAP-positive cells are increased in response to treatment. PEMF treatment markedly increases the number of cells immunopositive to TGFbeta. CONCLUSIONS: Treatment with PEMF appears to be disease-modifying in this model of osteoarthritis. Since TGFbeta is believed to upregulate gene expression for aggrecan, downregulate matrix metalloprotease and IL-1 activity, and upregulate inhibitors of matrix metalloprotease, the stimulation of TGFbeta may be a mechanism through which PEMF favorably affects cartilage homeostasis.

PMID: 12801485 [PubMed - indexed for MEDLINE]







Entrez	PubMed	Nucleotide	Protein	Genoms	Structi			Journals	Books
Search F	PubMed	for				***************************************	Go	Clear	
		Limits	Previe	ew/Index	Histor	ry (	Clipboard	Details	ì
About Entre	) <u>Z</u>	Display Abstr			Show: 20	Sort	+ Sen	d to Text	

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services Journals Database MeSH Database Single Citation Matcher Batch Citation Matcher Clinical Queries LinkOut Cubby

Related Resources Order Documents **NLM Catalog NLM Gateway** TOXNET Consumer Health Clinical Alerts ClinicalTrials.gov PubMed Central

**1:** Clin Orthop. 2004 Feb;(419):30-7.

Related Articles, Links



Stimulation of growth factor synthesis by electric and electromagnetic fields.

Aaron RK, Boyan BD, Ciombor DM, Schwartz Z, Simon BJ.

Department of Orthopaedics, Brown Medical School, Providence, RI, USA. Roy\_Aaron@brown.edu

Biophysical input, including electric and electromagnetic fields, regulate the expression of genes in connective tissue cells for structural extracellular matrix (ECM) proteins resulting in an increase in cartilage and bone production. In in vivo models and clinical situations, this can be manifested as enhanced repair and a gain in mechanical properties of the repairing tissues. The mechanisms by which cell functions are regulated by biophysical input is the subject of this review. Biophysical interactions of electric and electromagnetic fields at the cell membrane are not well understood and require considerable additional study. We review information on transmembrane signaling, channel activation and receptor stimulation or blockade. Understanding physical interactions and transmembrane signaling will most likely be necessary to establish dosing paradigms and improve therapeutic efficacy. Considerable information has been generated on an intermediary mechanism of activity - growth factor stimulation. Electric and electromagnetic fields increase gene expression for, and synthesis of, growth factors and this may function to amplify field effects through autocrine and paracrine signaling. Electric and electromagnetic fields can produce a sustained upregulation of growth factors, which enhance, but do not disorganize endochondral bone formation. Progress in the areas of signal transduction and growth factor synthesis is very rapid and future directions are suggested.

Publication Types:

- Review
- Review, Tutorial

PMID: 15021128 [PubMed - indexed for MEDLINE]

Display Abstract •	Show:	20 👻	Sort ☀	Send to Text •
--------------------	-------	------	--------	----------------

Write to the Help Desk NCBI | NLM | NIH

h

cb

h g

fcg c

e e b

b

b

С







Entrez	PubMed	Nucl	eotide	Protein	Genome	Structure	OMIM	PMC	Journals	Books	
Search	PubMed		f	or brain AND	) electromaç	netic field AND	*************************	sasasasasa sa	Clear	Dock	
		L	imits	Previe	w/Index	History	Clipt	ooard	Detai	ils	
About Ent	fax	Displ	ay S	ummary		Show: 500	Sort	Send	to Text		
		Items :	1 - 209	of 209					One	page	
Text Versi	on	□1:	Kundi	M, Mild K, Ha	rdell L, Matt	sson MO.		Rela	ated Articles	, Links	
Entrez Pi Overview Help   FAC Tutorial		Ų <u>raisi</u>	J Toxic	ol Environ He	alth B Crit R	era review of ev. 2004 Sep-Oct and for MEDLINI	t:7(5):351 <b>-</b> 84	ogical ev 1. Review.	idence.		
New/Notes E-Utilities	worthy					Ionizing Radiatio			ited Articles,	Links	
PubMed Journals C	Patabase	Medical magnetic resonance (MR) procedures: protection of patients. Health Phys. 2004 Aug;87(2):197-216. Review. No abstract available. PMID: 15257220 [PubMed - indexed for MEDLINE]									
	ition Matcher	□3:	<u>Johans</u>	Rela	ited Articles,	Links					
Clinical Qu LinkOut Cubby		Electromagnetic fields and health effectsepidemiologic studies of cancer, diseases of the central nervous system and arrhythmia-related heart disease. Scand J Work Environ Health. 2004;30 Suppl 1:1-30. Review. PMID: 15255560 [PubMed - indexed for MEDLINE]									
Related F Order Doc	Resources uments	□4:	Dodina	LG. Poddubny	yi DA. Somo	v AIu.		Rela	ted Articles,	Links	
NLM Catai NLM Gateo TOXNET Consumer Clinical Ale ClinicalTria	way Health erts	4	on hur Med Tr	nan health (1 Prom Ekol. 20	review of li 004;(5):35-9.	rays caused b terature)] Review. Russian ed for MEDLINE	. No abstrac		ication dev	vices	
PubMed C		□ 5: 1	Martine	elli PT, Schulze	KE, Nelson	BR.		Rela	ted Articles,	Links	
		I Establish	review Dermate	<b>of the litera</b> ol Surg. 2004 J	nture on imj Jul;30(7):102	n a patient with plantable elect 1-30. Review. ed for MEDLINE	rical devic	rain stim ces.	ılator: a		
		<b>□ 6:</b> <u>/</u>	Akamat	su N, Tsuji S.				Rela	ted Articles,	Links	
		A ESS	Rinsho	Shinkeigaku. 2	:003 Nov;43(	ent of status e 11):799-801. Rev ed for MEDLINE	iew. Japane	se.			
		□7: P	arra J.	<u>Kalitzin SN, d</u>	a Silva FH.			Rela	ed Articles,	Links	
		to E	echnic Epilepsy	<b>lue?</b> / Behav. 2004 .	Jun;5(3):277-	investigationa -85. Review. ed for MEDLINE		routine c	linical		
		□ 8: ⊻	<u>Varman</u>	GR, Tripp HM	M, Warman V	L. Arendt J.		Relat	ed Articles, i	Links	
		p R	recaut Ladiat P	tions and con rot Dosimetry.	mplexities. 2003,106(4)	siology and el :369-73. Review. d for MEDLINE		netic field	studies:		
		□ 9: <u>C</u>	rasson	<u>M.</u>				Relat	ed Articles, t	_inks	

50-60 Hz electric and magnetic field effects on cognitive function in

b e

e ch

cb

h g

e

e

e fcg

h

	humans: a review. Radiat Prot Dosimetry. 2003;106(4):333-40. Review. PMID: 14690276 [PubMed - indexed for MEDLINE]	
□10	: Durand DM.	Related Articles, Links
	Electric field effects in hyperexcitable neural tissue: a r Radiat Prot Dosimetry. 2003;106(4):325-31. Review. PMID: 14690275 [PubMed - indexed for MEDLINE]	eview.
<b>T</b> 11	: Jefferys JG, Deans J, Bikson M, Fox J.	Related Articles, Links
	Effects of weak electric fields on the activity of neurons networks.  Radiat Prot Dosimetry. 2003,106(4):321-3. Review.  PMID: 14690274 [PubMed - indexed for MEDLINE]	s and neuronal
□ 12	: Heynick LN, Johnston SA, Mason PA.	Related Articles, Links
	Radio frequency electromagnetic fields: cancer, mutage genotoxicity. Bioelectromagnetics. 2003;Suppl 6:S74-100. Review. PMID: 14628308 [PubMed - indexed for MEDLINE]	nesis, and
□ 13	: Anderson V.	Related Articles, Links
	Comparisons of peak SAR levels in concentric sphere h children and adults for irradiation by a dipole at 900 MF Phys Med Biol. 2003 Oct 21;48(20):3263-75. PMID: 14620057 [PubMed - indexed for MEDLINE]	ead models of Iz.
□ 14	: Akamatsu N, Tsuji S.	Related Articles, Links
	[Present status of non-drug therapy and transcranial mag therapy for patients with Parkinson's disease] Nippon Naika Gakkai Zasshi. 2003 Aug 10;92(8):1456-60. Review available. PMID: 13677894 [PubMed - indexed for MEDLINE]	
□ 15:	George MS, Nahas Z, Kozol FA, Li X, Yamanaka K, Mishory A, Bohning DE	Related Articles, Links
	Mechanisms and the current state of transcranial magnet CNS Spectr. 2003 Jul;8(7):496-514. Review. PMID: 12894031 [PubMed - indexed for MEDLINE]	ic stimulation.
□16:	Petersen NT, Pyndt HS, Nielsen JB.	Related Articles, Links
	Investigating human motor control by transcranial magn Exp Brain Res. 2003 Sep;152(1):1-16. Epub 2003 Jul 17. Review. PMID: 12879177 [PubMed - indexed for MEDLINE]	etic stimulation.
□ 17:	Kobayashi M, Pascual-Leone A.	Related Articles, Links
	Transcranial magnetic stimulation in neurology. Lancet Neurol. 2003 Mar;2(3):145-56. Review. PMID: 12849236 [PubMed - indexed for MEDLINE]	
□ 18:	Roosli M, Rapp R, Braun-Fahrlander C.	Related Articles, Links
	[Radio and microwave frequency radiation and healtha: literature] Gesundheitswesen. 2003 Jun;65(6):378-92. Review. German. PMID: 12836129 [PubMed - indexed for MEDLINE]	n analysis of the
□ 19:		

Transcranial magnetic stimulation: studying motor neurophysiology of

b e

e ch

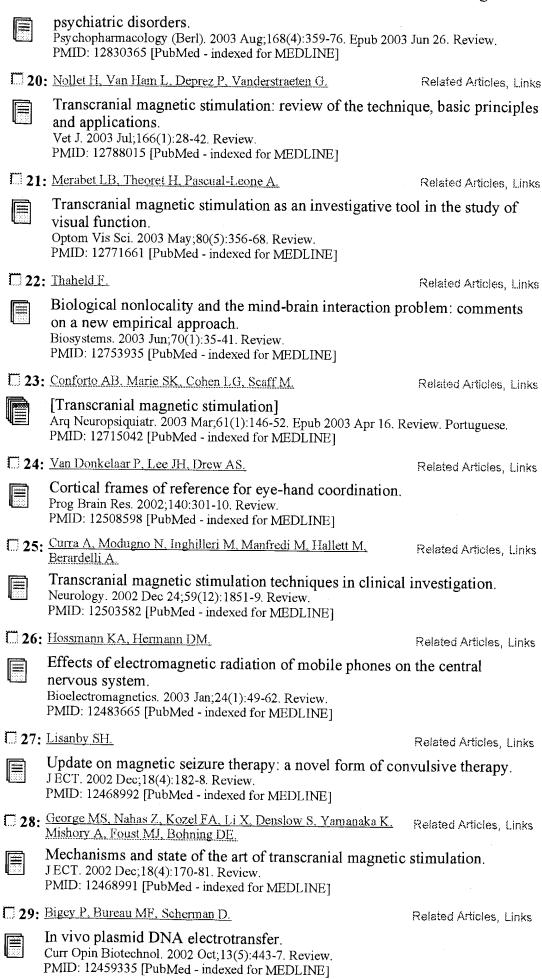
h g

e e

e fcg

cb

h



cb

h g

e e

fcg

e ch

cb

h g

e

e

e fcg

e ch

		1 age 4 01 21					
□30	: Krings T, Reinges MH, Foltys H, Cosgrove GR, Thron A	Related Articles, Links					
	Multimodality neuroimaging: research and clinical app Neurol Clin Neurophysiol. 2001;2001(1):2-11. Review. PMID: 12396864 [PubMed - indexed for MEDLINE]	lications.					
□31	• Schonfeldt-Lecuona C, Walter H, Connemann BJ, Kassubek J, Spitzer M, Herwig U.	Related Articles, Links					
	[Historical review and recent research trends of the antidepressant repetitive transcranial magnetic stimulation (rTMS)] Fortschr Neurol Psychiatr. 2002 Oct;70(10):520-30. Review. German. PMID: 12376914 [PubMed - indexed for MEDLINE]						
□ 32	Wrensch M, Minn Y, Chew T, Bondy M, Berger MS.	Related Articles, Links					
	Epidemiology of primary brain tumors: current concept literature.  Neuro-oncol. 2002 Oct;4(4):278-99. Review.  PMID: 12356358 [PubMed - indexed for MEDLINE]						
□ 33	: Ugawa Y.	Related Articles, Links					
	[What has TMS revealed in human neurophysiology?] No To Shinkei. 2002 Aug;54(8):647-54. Review. Japanese. No abstract available. PMID: 12355875 [PubMed - indexed for MEDLINE]						
□ 34	Quiner S, Letmaier M, Barnas C, Heiden A, Kasper S.	Related Articles, Links					
	[Transcranial magnetic stimulation (TMS)from diagnostic procedure to therapy] Wien Klin Wochenschr. 2002 Mar 28;114(5-6):181-6. Review. German. PMID: 12238306 [PubMed - indexed for MEDLINE]						
□ 35:	Lewis JE, Maler L.	Related Articles, Links					
	Blurring of the senses: common cues for distance percepsensory systems.  Neuroscience. 2002;114(1):19-22. Review.  PMID: 12207951 [PubMed - indexed for MEDLINE]	tion in diverse					
□ 36:	Fisher J.	Related Articles, Links					
	Cancer in the semiconductor industry.  Arch Environ Health. 2002 Mar-Apr;57(2):95-7. Review. No abstra PMID: 12194164 [PubMed - indexed for MEDLINE]						
□ 37:	Gandhi OP.	Related Articles, Links					
	Electromagnetic fields: human safety issues. Annu Rev Biomed Eng. 2002;4:211-34. Epub 2002 Mar 22. Review PMID: 12117757 [PubMed - indexed for MEDLINE]						
□38:	Burt T, Lisanby SH, Sackeim HA.	Related Articles, Links					
	Neuropsychiatric applications of transcranial magnetic st	imulation: a meta					
<b>'</b>	analysis. Int J Neuropsychopharmacol. 2002 Mar;5(1):73-103. PMID: 12057034 [PubMed - indexed for MEDLINE]						
□ 39:	Bundzen PV, Korotkov KG, Unestahl LE.	Related Articles, Links					
4 1 2 2 2 2 2	Altered states of consciousness: review of experimental daniel a multiple techniques approach.  J Altern Complement Med. 2002 Apr;8(2):153-65.  PMID: 12006123 [PubMed - indexed for MEDLINE]	ata obtained with					
□ 40:	Villeneuve PJ, Agnew DA, Johnson KC, Mao Y; Canadian Cancer	Related Articles, Links					

cb

h g

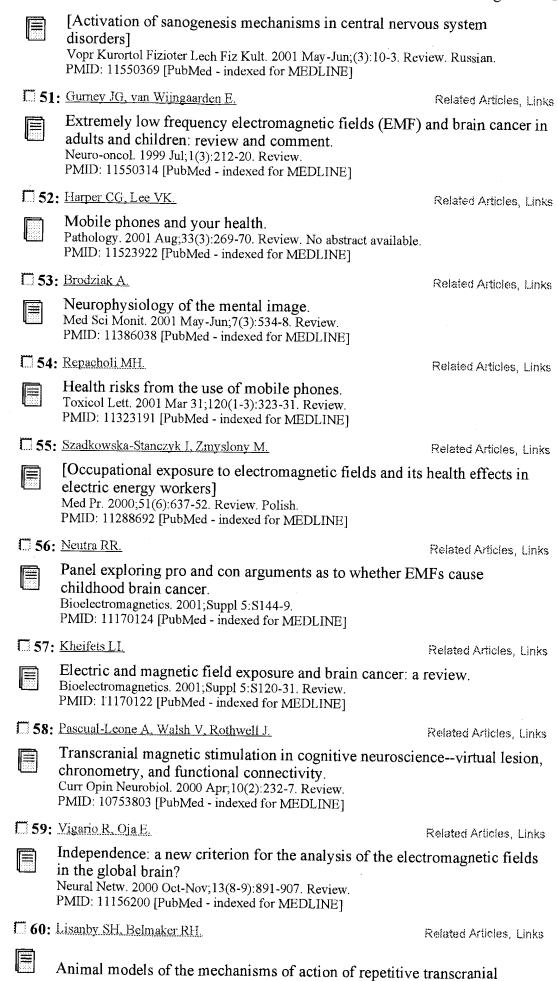
fcg

e ch

b e

h

Registries Epidemiology Research Group. Brain cancer and occupational exposure to magnetic fields among men: results from a Canadian population-based case-control study. Int J Epidemiol. 2002 Feb;31(1):210-7. PMID: 11914323 [PubMed - indexed for MEDLINE] 1 41: Cantello R, Tarletti R, Civardi C. Related Articles, Links Transcranial magnetic stimulation and Parkinson's disease. Brain Res Brain Res Rev. 2002 Feb;38(3):309-27. Review. PMID: 11890979 [PubMed - indexed for MEDLINE] 42: Vrba J. Robinson SE. Related Articles, Links Signal processing in magnetoencephalography. Methods. 2001 Oct; 25(2): 249-71. Review. PMID: 11812209 [PubMed - indexed for MEDLINE] 43: Lantz G, Spinelli L, Menendez RG, Seeck M, Michel CM. Related Articles, Links Localization of distributed sources and comparison with functional MRI. Epileptic Disord. 2001 Jul; Special Issue: 45-58. PMID: 11781200 [PubMed - in process] 44: Bortkiewicz A. Related Articles, Links [A study on the biological effects of exposure mobile-phone frequency EMF] Med Pr. 2001;52(2):101-6. Review. Polish. PMID: 11761657 [PubMed - indexed for MEDLINE] 45: Ahlbom IC, Cardis E, Green A, Linet M, Savitz D, Swerdlow A; Related Articles, Links ICNIRP (International Commission for Non-Ionizing Radiation Protection) Standing Committee on Epidemiology. Review of the epidemiologic literature on EMF and Health. Environ Health Perspect. 2001 Dec;109 Suppl 6:911-33. Review. PMID: 11744509 [PubMed - indexed for MEDLINE] 46: Grigor'ev IuG. Related Articles, Links [Mobile communication: radiobiology problems and evaluation of danger] Radiats Biol Radioecol. 2001 Sep-Oct;41(5):500-13. Review. Russian. PMID: 11721344 [PubMed - indexed for MEDLINE] 47: Fatkhutdinova LM. Related Articles, Links [Nervous system effects caused by electromagnetic fields with frequency up to 400 kHz (review of literature)] Med Tr Prom Ekol. 2001;(9):20-7. Review. Russian. No abstract available. PMID: 11685814 [PubMed - indexed for MEDLINE] 48: Garcia-Toro M, Montes JM, Talavera JA. Related Articles, Links Functional cerebral asymmetry in affective disorders: new facts contributed by transcranial magnetic stimulation. J Affect Disord. 2001 Oct;66(2-3):103-9. Review. PMID: 11578662 [PubMed - indexed for MEDLINE] 49: Post A. Keck ME. Related Articles, Links Transcranial magnetic stimulation as a therapeutic tool in psychiatry: what do we know about the neurobiological mechanisms? J Psychiatr Res. 2001 Jul-Aug; 35(4):193-215. Review. PMID: 11578638 [PubMed - indexed for MEDLINE] 50: Mikhailov VP, Vizilo TL, Kuz'michev AA, Petrushenko KV. Related Articles, Links



fcg

cb

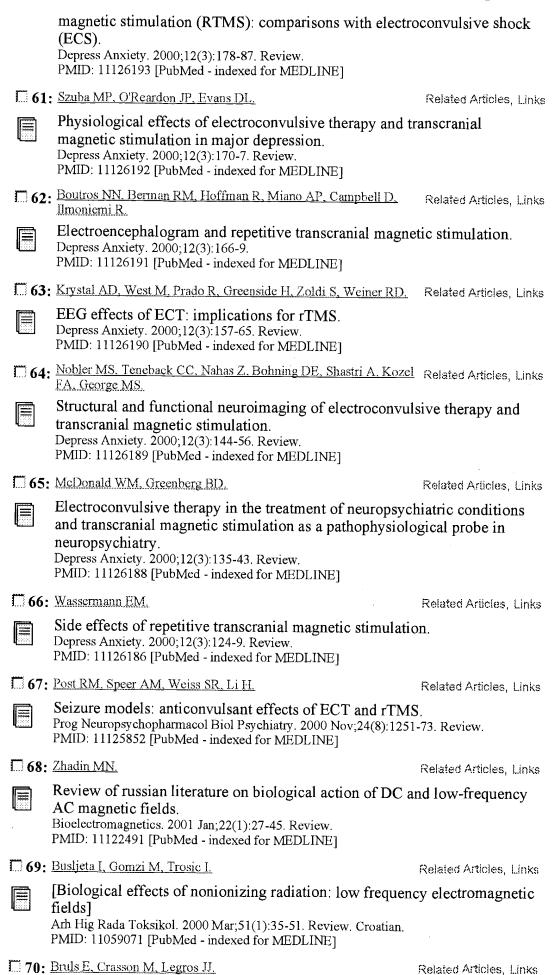
h g

fcg

e ch

bе

h

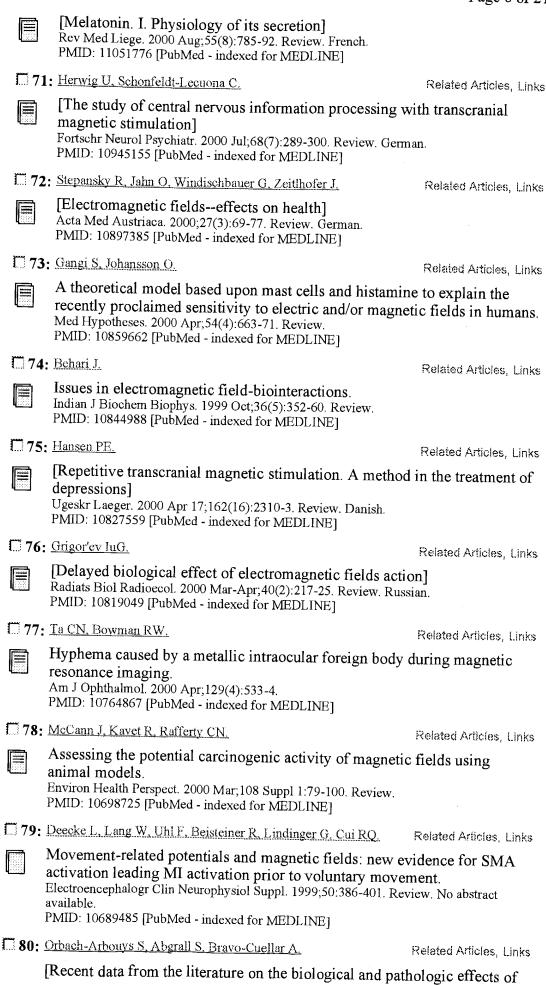


cb

h g

fcg

e ch



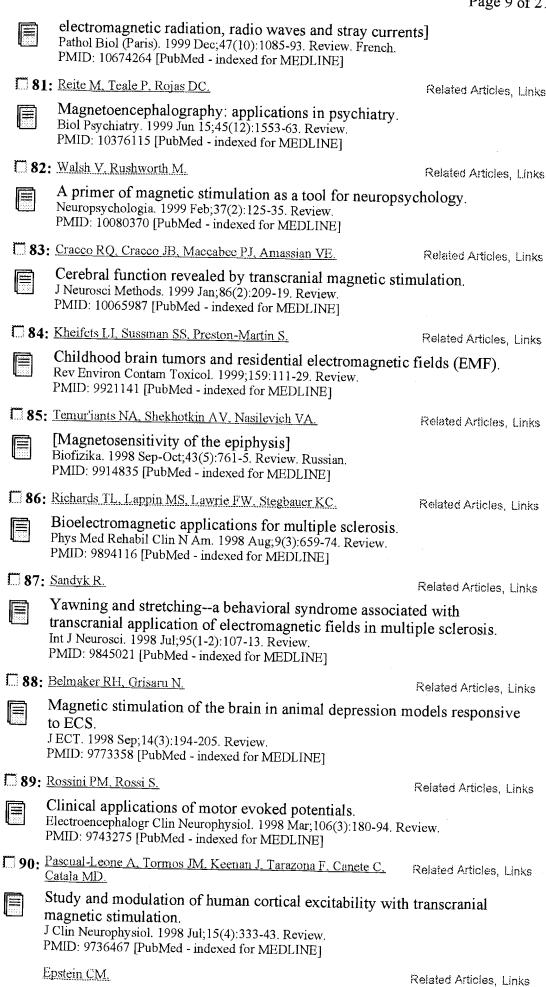
cb

h g

fcg

e ch

b e



		Page 10 of 21
□91	l:	
	Transcranial magnetic stimulation: language function. J Clin Neurophysiol. 1998 Jul;15(4):325-32. Review. PMID: 9736466 [PubMed - indexed for MEDLINE]	
<b>5</b> 92	: Cohen LG, Ziemann U, Chen R, Classen J, Hallett M, Gerloff C, Butefisch C	Related Articles, Links
1000	Studies of neuroplasticity with transcranial magnetic st J Clin Neurophysiol. 1998 Jul;15(4):305-24. Review. PMID: 9736465 [PubMed - indexed for MEDLINE]	imulation.
□ 93	: Amassian VE, Cracco RQ, Maccabee PJ, Cracco JB, Rudell AP, Eberle L.	Related Articles, Links
	Transcranial magnetic stimulation in study of the visual J Clin Neurophysiol. 1998 Jul;15(4):288-304. Review. PMID: 9736464 [PubMed - indexed for MEDLINE]	l pathway.
□94	: Tarquini B. Perfetto F. Tarquini R.	Related Articles, Links
	[Melatonin and seasonal depression] Recenti Prog Med. 1998 Jul-Aug;89(7-8):395-403. Review. Italian PMID: 9691735 [PubMed - indexed for MEDLINE]	· ·
□ 95:	McCann J, Dietrich F, Rafferty C.	Related Articles, Links
	The genotoxic potential of electric and magnetic fields: Mutat Res. 1998 Aug;411(1):45-86. PMID: 9675241 [PubMed - indexed for MEDLINE]	an update.
□ 96:	Sandyk R.	Related Articles, Links
20000 	A neuromagnetic view of hippocampal memory function Int J Neurosci. 1998 Apr;93(3-4):251-6. Review. PMID: 9639242 [PubMed - indexed for MEDLINE]	ns.
□ 97:	Allen PS, Thompson RB, Wilman AH.	Related Articles, Links
	Metabolite-specific NMR spectroscopy in vivo. NMR Biomed. 1997 Dec;10(8):435-44. Review. PMID: 9542740 [PubMed - indexed for MEDLINE]	
□98:	Hetherington HP, Pan JW, Chu WJ, Mason GF, Newcomer BR.	Related Articles, Links
	Biological and clinical MRS at ultra-high field. NMR Biomed. 1997 Dec;10(8):360-71. Review. PMID: 9542734 [PubMed - indexed for MEDLINE]	
□ 99:	<u>Fedorowski A, Steciwko A.</u>	Related Articles, Links
4 <u>-:</u>	[Biological effects of non-ionizing electromagnetic radia Med Pr. 1998;49(1):93-105. Review. Polish. PMID: 9587915 [PubMed - indexed for MEDLINE]	tion]
100	Macriens de Noordhout A.	Related Articles, Links
	[Applications of cortical magnetic stimulation] Neurophysiol Clin. 1998 Feb;28(1):9-30. Review. French. PMID: 9562996 [PubMed - indexed for MEDLINE]	
□ 101:	Baldwin WS, Barrett JC,	Related Articles, Links
	Melatonin: receptor-mediated events that may affect bre steroid hormone-dependent cancers. Mol Carcinog. 1998 Mar;21(3):149-55. Review. PMID: 9537645 [PubMed - indexed for MEDLINE]	ast and other
□ 102:	Miller RD, Neuberger JS, Gerald KB.	Related Articles, Links

cb

h g

e e

e fcg

e ch

cb

h g

e

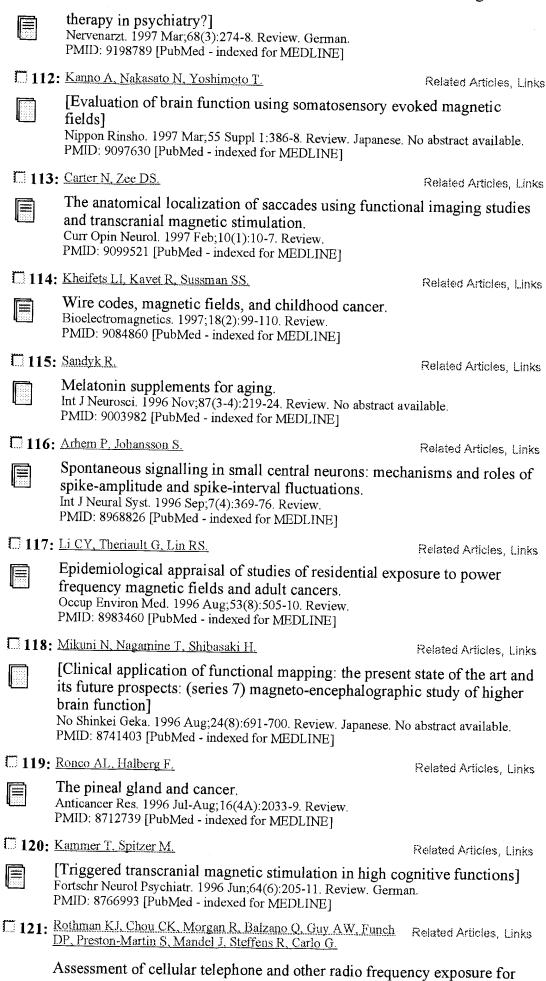
e fcg

Brain cancer and leukemia and exposure to power-frequency (50- to 60-Hz) electric and magnetic fields. Epidemiol Rev. 1997;19(2):273-93. Review. No abstract available. PMID: 9494788 [PubMed - indexed for MEDLINE] 103: Wassermann EM Related Articles, Links Risk and safety of repetitive transcranial magnetic stimulation; report and suggested guidelines from the International Workshop on the Safety of Repetitive Transcranial Magnetic Stimulation, June 5-7, 1996. Electroencephalogr Clin Neurophysiol. 1998 Jan; 108(1):1-16. PMID: 9474057 [PubMed - indexed for MEDLINE] 104: Miroshinkova TK. Related Articles, Links [Physical principles of protection from the effects of electromagnetic irradiation on biological objects (review of the literature)] Med Tr Prom Ekol. 1997;(10):21-3. Review. Russian. No abstract available. PMID: 9432259 [PubMed - indexed for MEDLINE] 105: Repacholi MH. Related Articles, Links Low-level exposure to radiofrequency electromagnetic fields: health effects and research needs. Bioelectromagnetics. 1998;19(1):1-19. Review. PMID: 9453702 [PubMed - indexed for MEDLINE] 106: Brandt SA, Ploner CJ, Meyer BU. Related Articles, Links [Repetitive transcranial magnetic stimulation. Possibilities, limits and safety aspects] Nervenarzt. 1997 Oct;68(10):778-84. Review. German. PMID: 9441249 [PubMed - indexed for MEDLINE] 107: Chen R, Cohen LG, Hallett M. Related Articles, Links Role of the ipsilateral motor cortex in voluntary movement. Can J Neurol Sci. 1997 Nov;24(4):284-91. Review. PMID: 9398974 [PubMed - indexed for MEDLINE] 108: Mandeville R, Franco E, Sidrac-Ghali S, Paris-Nadon L, Related Articles, Links Rocheleau N, Mercier G, Desy M, Gaboury L. Evaluation of the potential carcinogenicity of 60 Hz linear sinusoidal continuous-wave magnetic fields in Fischer F344 rats. FASEB J. 1997 Nov;11(13):1127-36. PMID: 9367347 [PubMed - indexed for MEDLINE] 109: <u>Sandyk R.</u> Related Articles, Links Resolution of sleep paralysis by weak electromagnetic fields in a patient with multiple sclerosis. Int J Neurosci. 1997 Aug;90(3-4):145-57. Review. PMID: 9352423 [PubMed - indexed for MEDLINE] 110: Post RM, Kimbrell TA, McCann U, Dunn RT, George MS, Weiss Related Articles, Links [Are convulsions necessary for the antidepressive effect of electroconvulsive therapy: outcome of repeated transcranial magnetic stimulation] Encephale. 1997 Jun;23 Spec No 3:27-35. Review. French. PMID: 9333558 [PubMed - indexed for MEDLINE] 111: Haag C. Padberg F. Moller HJ. Related Articles, Links

[Transcranial magnetic stimulation. A diagnostic means from neurology as

b e

e ch



cb

h g

fcg

e ch

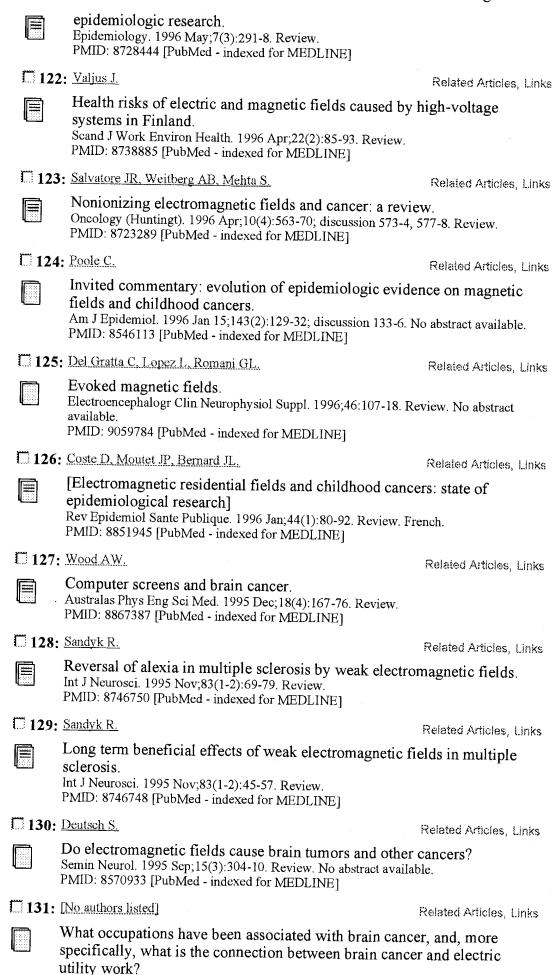
b

cb

h g

fcg

e ch



J Occup Environ Med. 1995 Sep;37(9):1067-9. Review. No abstract available. PMID: 8528712 [PubMed - indexed for MEDLINE] 132: Kato M. Related Articles, Links [Biological influences of electromagnetic fields] Hokkaido Igaku Zasshi. 1995 Jul;70(4):551-60. Review. Japanese. PMID: 7590602 [PubMed - indexed for MEDLINE] 133: Sandyk R. Related Articles, Links Chronic relapsing multiple sclerosis: a case of rapid recovery by application of weak electromagnetic fields. Int J Neurosci. 1995 Jun;82(3-4):223-42. Review. PMID: 7558651 [PubMed - indexed for MEDLINE] 134: Nielsen JB. Related Articles, Links [Non-invasive transcranial brain stimulation in man] Ugeskr Laeger. 1995 May 1;157(18):2559-64. Review. Danish. PMID: 7778239 [PubMed - indexed for MEDLINE] 135: Gallen CC, Hirschkoff EC, Buchanan DS. Related Articles, Links Magnetoencephalography and magnetic source imaging. Capabilities and Neuroimaging Clin N Am. 1995 May;5(2):227-49. Review. PMID: 7640886 [PubMed - indexed for MEDLINE] 136: Kirillov IuB, Ukhov IuI, Lastushkin AV, Suchkova ZhV, Karpov Related Articles, Links EM. [The mechanism of action of a magnetic field on the living organism] Vopr Kurortol Fizioter Lech Fiz Kult. 1995 May-Jun;(3):43-5. Review. Russian. No abstract available. PMID: 7483393 [PubMed - indexed for MEDLINE] 137: Savitz DA. Related Articles, Links Overview of occupational exposure to electric and magnetic fields and cancer: advancements in exposure assessment. Environ Health Perspect. 1995 Mar;103 Suppl 2:69-74. Review. PMID: 7614951 [PubMed - indexed for MEDLINE] ☐ **138**: Singh KD. Related Articles, Links Functional imaging of the brain using superconducting magnetometry. Endeavour. 1995;19(1):39-44. Review. PMID: 7729362 [PubMed - indexed for MEDLINE] 139: Grigor'ev IuG. Related Articles, Links [Body's reaction to weakened geomagnetic field (the effect of magnetic deprivation) Radiats Biol Radioecol. 1995 Jan-Feb;35(1):3-18. Review. Russian. PMID: 7719428 [PubMed - indexed for MEDLINE] 140: Jacobson JI. Related Articles, Links Pineal-hypothalamic tract mediation of picotesla magnetic fields in the treatment of neurological disorders. Panminerva Med. 1994 Dec;36(4):201-5. Review. PMID: 7603740 [PubMed - indexed for MEDLINE] 141: Pira E, Zanetti C, Saia B. Related Articles, Links [Carcinogenic risk of extremely-low-frequency electromagnetic fields:

state of the art]

fcg

e ch

b e

h

cb

h g

Med Lav. 1994 Nov-Dec;85(6):447-62. Review. Italian. PMID: 7731404 [PubMed - indexed for MEDLINE]

142: Sandyk R. Related Articles, Links Improvement in word-fluency performance in Parkinson's disease by administration of electromagnetic fields. Int J Neurosci. 1994 Jul;77(1-2):23-46. Review. PMID: 7989159 [PubMed - indexed for MEDLINE] **143:** Reiter RJ. Related Articles, Links Melatonin suppression by static and extremely low frequency electromagnetic fields: relationship to the reported increased incidence of cancer. Rev Environ Health. 1994 Jul-Dec;10(3-4):171-86. Review. PMID: 7724876 [PubMed - indexed for MEDLINE] 144: Sandyk R. Related Articles, Links Alzheimer's disease: improvement of visual memory and visuoconstructive performance by treatment with picotesla range magnetic Int J Neurosci. 1994 Jun;76(3-4):185-225. Review. PMID: 7960477 [PubMed - indexed for MEDLINE] 145: Jankovic BD, Nikolic P, Cupic V, Hladni K. Related Articles, Links Potentiation of immune responsiveness in aging by static magnetic fields applied to the brain. Role of the pineal gland. Ann N Y Acad Sci. 1994 May 31;719:410-8. Review. No abstract available. PMID: 8010610 [PubMed - indexed for MEDLINE] 146: Skyberg K, Vistnes Al. Related Articles, Links [Low frequency electromagnetic fields in the working environment-exposure and health effects. Elevated risk of cancer, reproductive hazards or other unwanted health effects?] Tidsskr Nor Laegeforen. 1994 Apr 10;114(9):1077-81. Review. Norwegian. PMID: 8009523 [PubMed - indexed for MEDLINE] 147: Langauer-Lewowicka H, Marzec S. Related Articles, Links [Influence of low frequency electromagnetic fields on the nervous system] Neurol Neurochir Pol. 1994 Jan-Feb;28(1):65-71. Review. Polish. PMID: 8028706 [PubMed - indexed for MEDLINE] 148: Hughes JT. Related Articles, Links Electromagnetic fields and brain tumours: a commentary. Teratog Carcinog Mutagen. 1994;14(5):213-7. Review. PMID: 7855741 [PubMed - indexed for MEDLINE] 149: Knave B. Related Articles, Links Electric and magnetic fields and health outcomes--an overview. Scand J Work Environ Health. 1994;20 Spec No:78-89. Review. PMID: 7846495 [PubMed - indexed for MEDLINE] ☐ 150: Savitz DA. Related Articles, Links Epidemiologic studies of electric and magnetic fields and cancer: strategies for extending knowledge. Environ Health Perspect. 1993 Dec; 101 Suppl 4:83-91. Review. PMID: 8206046 [PubMed - indexed for MEDLINE]

h

ch

hg e e e

151: Pelizzone M.

fcg

e ch

b e

Related Articles, Links

	Auditory magnetic fields in cochlear-implant patients. Physiol Meas. 1993 Nov;14 Suppl 4A:A81-4. Review. PMID: 8274990 [PubMed - indexed for MEDLINE]	
□ 152	: Rothwell JC.	Related Articles, Links
	Evoked potentials, magnetic stimulation studies, and expotentials.  Curr Opin Neurol. 1993 Oct;6(5):715-23. Review.  PMID: 8293142 [PubMed - indexed for MEDLINE]	vent-related
153	Leitgeb N.	Related Articles, Links
	[Analysis of epidemiologic studies of magnetic field-in Biomed Tech (Berl). 1993 May;38(5):111-6. Review. German. PMID: 8334220 [PubMed - indexed for MEDLINE]	nduced cancer risk]
□ 154	Kuijten RR, Bunin GR	Related Articles, Links
	Risk factors for childhood brain tumors. Cancer Epidemiol Biomarkers Prev. 1993 May-Jun;2(3):277-88. Favailable. PMID: 8318881 [PubMed - indexed for MEDLINE]	Review. No abstract
□ 155:	Sisken BF, Walker J, Orgel M.	Related Articles, Links
	Prospects on clinical applications of electrical stimulative regeneration.  J Cell Biochem. 1993 Apr;51(4):404-9. Review.  PMID: 8496243 [PubMed - indexed for MEDLINE]	on for nerve
□ 156:	Savitz DA.	Related Articles, Links
	Overview of epidemiologic research on electric and macancer.  Am Ind Hyg Assoc J. 1993 Apr;54(4):197-204. Review.  PMID: 8480635 [PubMed - indexed for MEDLINE]	gnetic fields and
□ 157:	Reiter RJ.	Related Articles, Links
	Static and extremely low frequency electromagnetic fie reported effects on the circadian production of melatoni J Cell Biochem. 1993 Apr;51(4):394-403. Review. PMID: 8098713 [PubMed - indexed for MEDLINE]	ld exposure: in.
□ 158:	Sandyk R. Derpapas K.	Related Articles, Links
	Magnetic fields normalize visual evoked potentials and evoked potentials in multiple sclerosis.  Int J Neurosci. 1993 Feb;68(3-4):241-53. Review.  PMID: 8063529 [PubMed - indexed for MEDLINE]	brainstem auditory
□ 159:	Reiter RJ.	Related Articles, Links
****	A review of neuroendocrine and neurochemical changes static and extremely low frequency electromagnetic fiel Integr Physiol Behav Sci. 1993 Jan-Mar;28(1):57-75. Review. No a PMID: 8476743 [PubMed - indexed for MEDLINE]	d exposure.
□160:	Beric A.	Related Articles, Links
	Transcranial electrical and magnetic stimulation. Adv Neurol. 1993;63:29-42. Review. No abstract available. PMID: 8279314 [PubMed - indexed for MEDLINE]	
□ 161:	Savitz DA, Pearce N, Poole C.	Related Articles, Links
	Update on methodological issues in the epidemiology of	f electromagnetic

cb

h g

fcg

e ch

cb

h g

	fields and cancer. Epidemiol Rev. 1993;15(2):558-66. Review. No abstract available PMID: 8174671 [PubMed - indexed for MEDLINE]	
□ 162:	Sandyk R.	Related Articles, Links
	The influence of the pineal gland on migraine and clust effects of treatment with picoTesla magnetic fields. Int J Neurosci. 1992 Nov-Dec;67(1-4):145-71. Review. PMID: 1305631 [PubMed - indexed for MEDLINE]	er headaches and
<b>163</b> :	Rossini PM, Caramia MD.	Related Articles, Links
	Central conduction studies and magnetic stimulation. Curr Opin Neurol Neurosurg. 1992 Oct;5(5):697-703. Review. PMID: 1327307 [PubMed - indexed for MEDLINE]	
□ 164:	Sandyk R.	Related Articles, Links
	Successful treatment of multiple sclerosis with magneti Int J Neurosci. 1992 Oct;66(3-4):237-50. Review. PMID: 1305621 [PubMed - indexed for MEDLINE]	c fields.
□ 165:	Sandyk R.	Related Articles, Links
	Magnetic fields in the therapy of parkinsonism. Int J Neurosci. 1992 Oct;66(3-4):209-35. Review. PMID: 1305620 [PubMed - indexed for MEDLINE]	
□ 166:	Meyer BU, Dichl RR.	Related Articles, Links
	[Examination of the visual system with transcranial mag Nervenarzt. 1992 Jun;63(6):328-34. Review. German. PMID: 1635614 [PubMed - indexed for MEDLINE]	gnetic stimulation]
□ 167:	Reiter RJ	Related Articles, Links
□ 167: □	Reiter RJ.  Alterations of the circadian melatonin rhythm by the elesspectrum: a study in environmental toxicology.  Regul Toxicol Pharmacol. 1992 Jun;15(3):226-44. Review.  PMID: 1509117 [PubMed - indexed for MEDLINE]	
	Alterations of the circadian melatonin rhythm by the elesspectrum: a study in environmental toxicology. Regul Toxicol Pharmacol. 1992 Jun;15(3):226-44. Review.	
	Alterations of the circadian melatonin rhythm by the elesspectrum: a study in environmental toxicology.  Regul Toxicol Pharmacol. 1992 Jun;15(3):226-44. Review.  PMID: 1509117 [PubMed - indexed for MEDLINE]	ectromagnetic  Related Arlicles, Links
☐ 168: ☐	Alterations of the circadian melatonin rhythm by the elesspectrum: a study in environmental toxicology.  Regul Toxicol Pharmacol. 1992 Jun;15(3):226-44. Review.  PMID: 1509117 [PubMed - indexed for MEDLINE]  Jacobson JI.  "Exploring the potential of magneto-recrystallization of associated structures with respect to nerve regeneration Int J Neurosci. 1992 May-Jun;64(1-4):153-65. Review.	ectromagnetic  Related Arlicles, Links
☐ 168: ☐	Alterations of the circadian melatonin rhythm by the elesspectrum: a study in environmental toxicology. Regul Toxicol Pharmacol. 1992 Jun;15(3):226-44. Review. PMID: 1509117 [PubMed - indexed for MEDLINE]  Jacobson JI.  "Exploring the potential of magneto-recrystallization of associated structures with respect to nerve regeneration Int J Neurosci. 1992 May-Jun;64(1-4):153-65. Review. PMID: 1342035 [PubMed - indexed for MEDLINE]	Related Articles, Links genes and and cancer".  Related Articles, Links
□ 168: □ 169:	Alterations of the circadian melatonin rhythm by the elesspectrum: a study in environmental toxicology.  Regul Toxicol Pharmacol. 1992 Jun;15(3):226-44. Review.  PMID: 1509117 [PubMed - indexed for MEDLINE]  Jacobson JI.  "Exploring the potential of magneto-recrystallization of associated structures with respect to nerve regeneration Int J Neurosci. 1992 May-Jun;64(1-4):153-65. Review.  PMID: 1342035 [PubMed - indexed for MEDLINE]  Stevens RG, Davis S, Thomas DB, Anderson LE, Wilson BW.  Electric power, pineal function, and the risk of breast ca FASEB J. 1992 Feb 1;6(3):853-60. Review.	Related Articles, Links genes and and cancer".  Related Articles, Links
□ 168: □ 169:	Alterations of the circadian melatonin rhythm by the elesspectrum: a study in environmental toxicology. Regul Toxicol Pharmacol. 1992 Jun;15(3):226-44. Review. PMID: 1509117 [PubMed - indexed for MEDLINE]  Jacobson JI.  "Exploring the potential of magneto-recrystallization of associated structures with respect to nerve regeneration Int J Neurosci. 1992 May-Jun;64(1-4):153-65. Review. PMID: 1342035 [PubMed - indexed for MEDLINE]  Stevens RG, Davis S, Thomas DB, Anderson LE, Wilson BW.  Electric power, pineal function, and the risk of breast ca FASEB J. 1992 Feb 1;6(3):853-60. Review.  PMID: 1740235 [PubMed - indexed for MEDLINE]	Related Articles, Links genes and and cancer".  Related Articles, Links ncer.
☐ 168: ☐ 169: ☐ 170:	Alterations of the circadian melatonin rhythm by the elesspectrum: a study in environmental toxicology. Regul Toxicol Pharmacol. 1992 Jun;15(3):226-44. Review. PMID: 1509117 [PubMed - indexed for MEDLINE]  Jacobson JI.  "Exploring the potential of magneto-recrystallization of associated structures with respect to nerve regeneration Int J Neurosci. 1992 May-Jun;64(1-4):153-65. Review. PMID: 1342035 [PubMed - indexed for MEDLINE]  Stevens RG. Davis S. Thomas DB. Anderson LE, Wilson BW.  Electric power, pineal function, and the risk of breast ca FASEB J. 1992 Feb 1;6(3):853-60. Review.  PMID: 1740235 [PubMed - indexed for MEDLINE]  Sandyk R. Anastasiadis PG, Anninos PA, Tsagas N.  Is the pineal gland involved in the pathogenesis of endorant J Neurosci. 1992 Jan;62(1-2):89-96. Review.	Related Articles, Links genes and and cancer".  Related Articles, Links ncer.
☐ 168: ☐ 169: ☐ 170:	Alterations of the circadian melatonin rhythm by the elesspectrum: a study in environmental toxicology. Regul Toxicol Pharmacol. 1992 Jun;15(3):226-44. Review. PMID: 1509117 [PubMed - indexed for MEDLINE]  Jacobson JI.  "Exploring the potential of magneto-recrystallization of associated structures with respect to nerve regeneration Int J Neurosci. 1992 May-Jun;64(1-4):153-65. Review. PMID: 1342035 [PubMed - indexed for MEDLINE]  Stevens RG. Davis S. Thomas DB. Anderson LE, Wilson BW.  Electric power, pineal function, and the risk of breast ca FASEB J. 1992 Feb 1;6(3):853-60. Review.  PMID: 1740235 [PubMed - indexed for MEDLINE]  Sandyk R. Anastasiadis PG, Anninos PA, Tsagas N.  Is the pineal gland involved in the pathogenesis of endor Int J Neurosci. 1992 Jan;62(1-2):89-96. Review.  PMID: 1342018 [PubMed - indexed for MEDLINE]	Related Articles, Links genes and and cancer".  Related Articles, Links ncer.  Related Articles, Links metrial carcinoma.  Related Articles, Links

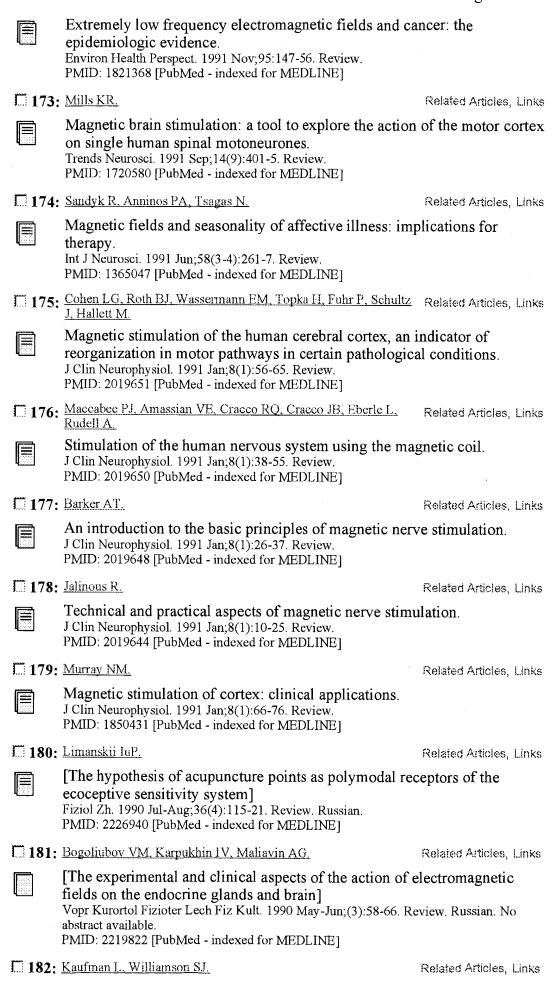
e ch

fcg

cb

h g

h



e ch

bе

fcg

h

cb

h g

e e

e fcg

e ch

b e

		1 4 5 6 7 5 6 7 2 1
*****	Neuromagnetic localization of neuronal activity in visu cortex.	
	Res Publ Assoc Res Nerv Ment Dis. 1990;67:271-87. Review. No PMID: 2406820 [PubMed - indexed for MEDLINE]	abstract available.
□ 183:	Olcese JM.	Related Articles, Links
	The neurobiology of magnetic field detection in rodents Prog Neurobiol. 1990;35(4):325-30. Review. No abstract available PMID: 2281140 [PubMed - indexed for MEDLINE]	3. :
□ 184:	Blackman CF, Benane SG, House DE, Elliott DJ.	Related Articles, Links
	Importance of alignment between local DC magnetic field oscillating magnetic field in responses of brain tissue in Bioelectromagnetics. 1990;11(2):159-67. PMID: 2242051 [PubMed - indexed for MEDLINE]	
□ 185:	Williamson SJ, Kaufman L.	Related Articles, Links
	Evolution of neuromagnetic topographic mapping. Brain Topogr. 1990 Fall;3(1):113-27. Review. PMID: 2094299 [PubMed - indexed for MEDLINE]	
□ 186:	Vieth J.	Related Articles, Links
	State of the multichannel magnetoencephalography. Biomed Tech (Berl). 1990;35 Suppl 3:146-9. Review. PMID: 2078672 [PubMed - indexed for MEDLINE]	
□ 187:	Tepley N.	Related Articles, Links
	Neuromagnetism: a new approach for localizing brain for Funct Neurol. 1989 Oct-Dec;4(4):321-5. Review. PMID: 2695410 [PubMed - indexed for MEDLINE]	unction.
□ 188:	Armstrong RA, Janday B.	Related Articles, Links
	A brief review of magnetic fields from the human visua Ophthalmic Physiol Opt. 1989 Jul;9(3):299-301. Review. PMID: 2695882 [PubMed - indexed for MEDLINE]	l system.
□ 189:	Kishi R, Miyake H.	Related Articles, Links
	[Association between parental occupational exposure an malignancy. A review of epidemiological studies] Sangyo Igaku. 1989 May;31(3):121-35. Review. Japanese. PMID: 2677456 [PubMed - indexed for MEDLINE]	d childhood
□ 190:	Wilson BW, Stevens RG, Anderson LE	Related Articles, Links
	Neuroendocrine mediated effects of electromagnetic-fie possible role of the pineal gland. Life Sci. 1989;45(15):1319-32. Review. PMID: 2677573 [PubMed - indexed for MEDLINE]	ld exposure:
□ 191:	Hess CW, Ludin HP.	Related Articles, Links
	[Transcranial cortex stimulation with magnetic field pull and physiologic principles] EEG EMG Z Elektroenzephalogr Elektromyogr Verwandte Geb. 19 Review. German.	
••••	PMID: 3145181 [PubMed - indexed for MEDLINE]	
192:		Related Articles, Links
	Geophysical variables and behavior: LIII. Epidemiologic for incidence of cancer and depression in areas of freque	cal considerations and UFO reports.

Percept Mot Skills. 1988 Dec;67(3):799-803. Review. PMID: 3067208 [PubMed - indexed for MEDLINE]

	TWID. 500/200 [1 downed indexed for twiddental]	
□ 193	: Rossini PM.	Related Articles, Links
	The anatomic and physiologic bases of motor-evoked p Neurol Clin. 1988 Nov;6(4):751-69. Review. PMID: 3070337 [PubMed - indexed for MEDLINE]	otentials.
<b>194</b>	Zanakis MF.	Related Articles, Links
	The use of DC electric fields to promote regeneration in nervous system. ASAIO Trans. 1988 Oct-Dec;34(4):947-51. Review. No abstract a PMID: 3064792 [PubMed - indexed for MEDLINE]	
T 195	Levy WJ Jr.	Related Articles, Links
1000 1000 1000 1000 1000 1000 1000 100	The electrophysiological monitoring of motor pathways Clin Neurosurg. 1988;34:239-60. Review. No abstract available. PMID: 3288396 [PubMed - indexed for MEDLINE]	s.
□ 196:	Wilson BW.	Related Articles, Links
	Chronic exposure to ELF fields may induce depression. Bioelectromagnetics. 1988;9(2):195-205. Review. PMID: 3288221 [PubMed - indexed for MEDLINE]	
□ 197:	Holder DS.	Related Articles, Links
	Feasibility of developing a method of imaging neuronal human brain: a theoretical review.  Med Biol Eng Comput. 1987 Jan;25(1):2-11. Review. No abstract PMID: 2826937 [PubMed - indexed for MEDLINE]	•
□ 198:	Hari R, Ilmoniemi RJ.	Related Articles, Links
	Cerebral magnetic fields. Crit Rev Biomed Eng. 1986;14(2):93-126. Review. PMID: 3527557 [PubMed - indexed for MEDLINE]	
□ 199:	Tress BM, Brant-Zawadski M.	Related Articles, Links
	Nuclear magnetic resonance imaging. Basic principles. Med J Aust. 1985 Jan 7;142(1):21-4. Review. PMID: 3880860 [PubMed - indexed for MEDLINE]	
□ 200:	Herfkens RJ, Johnson GA.	Related Articles, Links
9996 9999 9999 9999	Magnetic resonance imaging at high-strength magnetic Magn Reson Annu. 1985;:197-215. Review. No abstract available. PMID: 3917235 [PubMed - indexed for MEDLINE]	fields.
□ 201:	Kneeland JB, Cahill PT, Lee BC, Peterson ME, Knowles RJ, Whalen JP.	Related Articles, Links
40.84 00.00 00.00 00.00 00.00	Nuclear magnetic resonance: status of clinical application Cornell Vet. 1985 Jan;75(1):130-58. Review. No abstract available PMID: 3884261 [PubMed - indexed for MEDLINE]	on.
□ 202:	Prochiantz A.	Related Articles, Links
	Neuronal growth and shape. Dev Neurosci. 1985;7(4):189-98. Review. PMID: 3007068 [PubMed - indexed for MEDLINE]	
□ 203:	Shogam II, Lenchin VN, Baranovskaja AV.	Related Articles, Links
	[Use of magnetotherapy in clinical neurology (review)]	

h

	PMID: 2984863 [PubMed - indexed for MEDLINE]	
□ 204:	Romani GL, Williamson SJ, Kaufman L.	Related Articles, Links
	Biomagnetic instrumentation. Rev Sci Instrum. 1982 Dec;53(12):1815-45. Review. No abstract a PMID: 6760371 [PubMed - indexed for MEDLINE]	vailable.
<b>205</b> :	Kholodov IuA.	Related Articles, Links
	[The body and magnetic fields] Usp Fiziol Nauk. 1982 Apr-May;13(2):48-64. Review. Russian. No PMID: 6178230 [PubMed - indexed for MEDLINE]	o abstract available.
<b>206</b> :	Obrosov AN, Krylov OA.	Related Articles, Links
	[Biological and therapeutic action of microwaves] Vopr Kurortol Fizioter Lech Fiz Kult. 1982 Mar-Apr;(2):1-8. Reviabstract available. PMID: 7046235 [PubMed - indexed for MEDLINE]	ew. Russian. No
<b>207</b> :	Toroptsev IV, Taranov SV.	Related Articles, Links
	[Morphological characteristics and various theories on t biological effect of magnetic fields] Arkh Patol. 1982;44(12):3-11. Review. Russian. PMID: 6762187 [PubMed - indexed for MEDLINE]	he mechanism of
208:	Reite M. Zimmerman J.	Related Articles, Links
100 K 100 K	Magnetic phenomena of the central nervous system. Annu Rev Biophys Bioeng. 1978;7:167-88. Review. No abstract av PMID: 352239 [PubMed - indexed for MEDLINE]	vailable.
ື 209:	[No authors listed]	Related Articles, Links
	Brain interactions with weak electric and magnetic field Neurosci Res Program Bull. 1977 Jan;15(1):1-129. Review. No abs PMID: 319377 [PubMed - indexed for MEDLINE]	S. stract available.
Display	Summary Show: 500 Sort S	end to Text -

Zh Nevropatol Psikhiatr Im S S Korsakova. 1985;85(1):135-40. Review. Russian. No

abstract available.

Write to the Help Desk

NCBI | NLM | NIH

Department of Health & Human Services

Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50







Entrez	PubMed	Nucleotide	Protein	Genome	Structure	<b>G</b>	PMC	Journals	Books
Search P	ubMed	for					Go	Clear	
		Limits	Previe	w/Index	History	Clip	board	Details	3
About Entrez	, -	Display Abst	ract	SI SI	how: 20	Sort	▼ Sen	d to Text	

Text Version

**1:** Crit Rev Biomed Eng. 1986;14(2):93-126.

Related Articles, Links

#### Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

**PubMed Services** Journals Database MeSH Database Single Citation Matcher Batch Citation Matcher Clinical Queries LinkOut Cubby

Related Resources Order Documents **NLM Catalog** NLM Gateway TOXNET Consumer Health Clinical Alerts ClinicalTrials.gov PubMed Central

h

## Cerebral magnetic fields.

## Hari R, Ilmoniemi RJ.

A critical presentation is given about the state-of-the-art of neuromagnetism, the study of neural functions by the measurement of magnetic fields. First, an introduction is given about the neural origin of electromagnetic fields. The forward and inverse problems are then studied. The forward problem can be stated as follows: given electrical currents in the brain, calculate the magnetic field. Correspondingly, the inverse problem is to calculate currents in the brain from the magnetic field measured outside the head. The instrumentation necessary for successful neuromagnetic measurements is discussed, and the emphasis is on new developments. The review of experimental neuromagnetic results discusses studies on spontaneous cerebral magnetic fields in normal subjects and in epileptic patients. Furthermore, evoked-field studies of the various sensory modalities as well as studies of event-related fields are reviewed. The relevance of various efforts in neuromagnetism and prospects for the future are discussed.

Publication Types:

Review

PMID: 3527557 [PubMed - indexed for MEDLINE]

Display Abstract -	Show: 20	Sort 💂	Send to Text •

Write to the Help Desk NCBI | NLM | NIH Department of Health & Human Services Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50

cb h g fcg c b e b e e







Entrez	PubMed	Nucleotide	Protein	Genome	Structure	OMIM	PMC	Journals	Books
Search F	PubMed	for				••••••	- Go	Clear	
		Limits	Previe	w/Index	History	Clipb		Detail	S
About Entre	DZ	Display Abst	ract	19000	how: 20 ¥ S	Sort	Send	te Text	
Text Versio	n	□ 1: Curr Opi	n Neurol.	1993 Oct;6	(5):715-23.		R	telated Articles	. Links

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
LinkOut
Cubby

Related Resources
Order Documents
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

h

Evoked potentials, magnetic stimulation studies, and eventrelated potentials.

Rothwell JC.

MRC Human Movement and Balance Unit, Institute of Neurology, London, UK.

With the technique of transcranial magnetic stimulation it is possible to study the function of motor pathways in normal subjects and in patients with neurologic disease. In conjunction with both evoked and event-related potentials, transcranial magnetic stimulation can be used to probe the processes involved in analyzing sensory input and in preparing for motor output.

Publication Types:

- Review
- Review, Tutorial

PMID: 8293142 [PubMed - indexed for MEDLINE]

Display Abstract ▼	Show: 20 Sort	Send to Text •

Write to the Help Desk

NCBI | NLM | NIH

Department of Health & Human Services

Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50

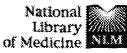
cb hg e e e fcg c e e e b b e b

ClinicalTrials.gov PubMed Central

h







	000000000000000000000000000000000000000			, "486							
Entrez	FubMed	Nucleotide	Protein	Genome	Structi	ure	MIMO	PMC	Journals	Book	
Search Publ	Med	for						Go	Clear		
		Limits	w/Index	Histo	ſy	Clip	oboard	Deta	iils		
About Entrez		Display Abst	ract		Show: 20	<b>₽</b> So	rt	▼ <u>Ser</u>	d to Text		
Text Version		☐ 1: Epidemiol Rev. 1997;19(2):273-93.							Related Articles, Links		
Entrez PubMe Overview Help   FAQ Tutorial	ed			nd leuke lectric a				power	-frequenc	<b>y</b>	
New/Noteworth	/ Willer K.D. Nellherder J.S. C-ergin K.B.										
PubMed Services Journals Database MeSH Database Single Citation Matcher Batch Citation Matcher Clinical Queries LinkOut Cubby				ctrical and 5204, USA		er Engir	neering	, Kansas	State Univ	ersity,	
		• Re	on Types eview eview, Mu								
Related Resources Order Documents NLM Catalog		PMID: 9	494788 [I	PubMed -	ndexed fo	or MED	LINE]	***********************	····	*****************	
NLM Gateway TOXNET Consumer Heat Clinical Alerts	th	<b>Display</b> Abst	ract		Show: 20	So	rt	Sen	d to Text	•	

Write to the Help Desk

NCBI | NLM | NIH

Department of Health & Human Services

Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50

cb hg e e e fcg c e e e b b e b







Entrez	PubMed	Nucleotide	Protein	Genome	Structure	MIMO	PMC	Journals	Book
Search	PubMed	for	•				Go	Clear	
		Limits		w/Index	History	Clip	board	Detai	ls
have Carl		Display Abs	tract	▼ S	how: 20 💌 S	Sort	Sen	d to Text	

Text Version

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
LinkOut
Cubby

Related Resources
Order Documents
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

1: J Altern Complement Med. 2002 Apr;8(2):153-65.

Related Articles, Links



Altered states of consciousness: review of experimental data obtained with a multiple techniques approach.

Bundzen PV, Korotkov KG, Unestahl LE.

Research Institute of Physical Culture, St. Petersburg, Russia.

OBJECTIVES: To investigate the psychophysiologic mechanisms of an altered state of consciousness (ASC) produced via systematic mental training by correlating the results of multiple computerized bioelectrographic measurements. DESIGN: All subjects were tested, using a set of modern computerized techniques comprising digital electroencephalography, measurement of the low-frequency bilateral activity of the brain, evoked bioelectrographic signals measured by computerized Kirlian photography (otherwise called gas discharge visualization [GDV]), self-reporting by subjects, linguistic testing, and profiling of mood states. LOCATION: Sweden and Russia from 1996 to 1999. SUBJECTS: Young volunteers (61) who underwent systematic mental training for not less than 7 weeks. Members of the control group (56) were not engaged in mental training. RESULTS: All participants involved in the systematic mental training showed significant positive changes in their psychoemotional status after 7 weeks of mental training. All of the techniques showed specific changes that might be associated with an ASC in the subjects. The Kirlian (GDV) patterns showed a form of "explosive activation," which was stable, reproducible, and correlated with an ASC. This led the authors to introduce the concept of short-term activation of the induced bioelectrographic processes and enabled the properties of this ACS to be determined for the first time. There were practically no changes in the control group. CONCLUSIONS: ASC activation took place with harmonization of the biopotential field of the brain, the psychic state, and the bioenergy fields. This is attributed to changes in both the psychosomatic and psychoenergetic autoregulation. This conclusion is of vital importance for understanding what happens in systematic mental training and understanding the fundamentals of bioenergetic and psychosomatic medicine.

PMID: 12006123 [PubMed - indexed for MEDLINE]

Show: 20 Sort Send to Text
----------------------------

C

Links





Full text article of

WWW BERR



***************************************			•		*		Or ME	TIETHE D		
Entrez	PubMed	Nucleotide		Protein	Genome	Structure	OMIM	PMC	Journals	Books
Search	PubMed		for					Go	Clear	
		Limits		Previev	v/Index	History	Clip	board	Detail	s
About Entre	ez	Display /	Abstra	act		Show: 20 💌	Sort	₹] <u>Sen</u>	d to Text	
Text Version	n	T1: J Bio	Che	m. 2004	Mar 12;2	79(11):10331-7	. Epub 20	003 Dec	Related A	rticles

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy

E-Utilities

16.

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
LinkOut
Cubby

Related Resources
Order Documents
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

h

Ras induction of superoxide activates ERK-dependent angiogenic transcription factor HIF-1alpha and VEGF-A expression in shock wave-stimulated osteoblasts.

Wang FS, Wang CJ, Chen YJ, Chang PR, Huang YT, Sun YC, Huang HC, Yang YJ, Yang KD.

Department of Medical Research, Chang Gung Memorial Hospital, Kaohsiung 833, Taiwan.

Vascular endothelial growth factor (VEGF) released by osteoblasts plays an important role in angiogenesis and endochondral ossification during bone formation. In animal studies, we have reported that shock waves (SW) can promote osteogenic differentiation of mesenchymal stem cells through superoxide-mediated signal transduction (Wang, F. S., Wang, C. J., Sheen-Chen, S. M., Kuo, Y. R., Chen, R. F., and Yang, K. D. (2002) J. Biol. Chem. 277, 10931-10937) and vascularization of the bone-tendon junction. Here, we found that SW elevation of VEGF-A expression in human osteoblasts to be mediated by Ras-induced superoxide and ERK-dependent HIF-1alpha activation. SW treatment (0.16 mJ/mm(2), 1 Hz, 500 impulses) rapidly activated Ras protein (15 min) and Rac1 protein (30 min) and increased superoxide production in 30 min and VEGF mRNA expression in 6 h. Early scavenging of superoxide, but not nitric oxide, peroxide hydrogen, or prostaglandin E(2), reduced SW-augmented VEGF-A levels. Inhibition of superoxide production by diphenyliodonium, an NADPH oxidase inhibitor, was found to suppress VEGF-A expression. Transfection of osteoblasts with a dominant negative (S17N) Ras mutant abrogated the SW enhancement of Rac1 activation, superoxide synthesis, and VEGF expression. Further studies demonstrated that SW significantly promoted ERK activation in 1 h and HIF-1alpha phosphorylation and HIF-1alpha binding to VEGF promoter in 3 h. In support of the observation that superoxide mediated the SW-induced ERK activation and HIF-1alpha transactivation, we further demonstrated that scavenging of superoxide by superoxide dismutase and inhibition of ERK activity by PD98059 decreased HIF-1alpha activation and VEGF-A levels. Moreover, culture medium harvested from SW-treated osteoblasts increased vessel number of chick chorioallantoic membrane. Superoxide dismutase pretreatment and anti-VEGF-A antibody neutralization reduced the promoting effect of conditioned medium on angiogenesis. Thus, modulation of redox reaction by SW may have some positive effect on angiogenesis during bone regeneration.







Entrez	PubMed	Nucleotide	Protein	Genome	Structure	MIMO	PMC	Journals	Book
Search P	ubMed	for					Go	Clear	
	Limits Preview/In		w/Index	History	Clip	board	Deta	ils	
Akani Mula		A hat	raat	<b>S</b> S	Show: 20 💌	Sort	<ul> <li>Sen</li> </ul>	d to Text	

Text Version

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
LinkOut
Cubby

Related Resources
Order Documents
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

1: Physiol Genomics. 2002 Dec 3;11(3):245-51.

Related Articles, Links

FREE full text article at www.physialgenomics.org

VEGF-C mediates cyclic pressure-induced endothelial cell proliferation.

Shin HY, Smith ML, Toy KJ, Williams PM, Bizios R, Gerritsen ME.

Department of Biomedical Engineering, Rensselaer Polytechnic Institute, Troy, New York 12180-3590, USA.

Mechanical forces modulate endothelial cell functions through several mechanisms including regulation of gene transcription. In the present study, gene transcription by human umbilical vein endothelial cells (HUVEC) either maintained under control pressure (that is, standard cell culture conditions equivalent to 0.15 mmHg sustained hydrostatic pressure) or exposed to 60/20 mmHg sinusoidal pressures at 1 Hz were compared using Affymetrix GeneChip microarrays to identify cellular/molecular mechanisms associated with endothelial cell responses to cyclic pressure. Cyclic pressure selectively affected transcription of 14 genes that included a set of mechanosensitive proteins involved in hemostasis (tissue plasminogen activator), cell adhesion (integrin-alpha2), and cell signaling (Rho B, cytosolic phospholipase A2), as well as a unique subset of cyclic pressure-sensitive genes such as vascular endothelial growth factor (VEGF)-C and transforming growth factor (TGF)beta2. The present study also provided first evidence that VEGF-C, the most highly induced gene under 60/20 mmHg, mediated HUVEC proliferation in response to this cyclic pressure. Cyclic pressure is, therefore, a mechanical force that modulates endothelial cell functions (such as proliferation) by activating a specific transcriptional program.

PMID: 12388793 [PubMed - indexed for MEDLINE]

Display Abstract •	Show: 20	Sort	<ul> <li>Send to Text</li> </ul>	

Write to the Help Desk

NCBI | NLM | NIH

Department of Health & Human Services

Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50

h cb hg e e e fcg c e e e b b e b







				**					
Entrez	PubMed	Nucleotide	Protein	Genome	Structure	OMIM	PMC	Journals	Books
Search F	PubMed	for					Go	Clear	
		Limits	Previe	w/Index	History	Clip	oboard	Deta	ils
About Entre	Z	Display Abs	tract		Show: 20	Sort	Y Sen	d to Text	
Text Version	ñ	1: Am J Ph (5):L897-903.	ysiol Lung	g Cell Mol	Physiol. 2002	2 May;282	;	Related /	Articles Links
Entrez Pul Overview	Med	(6).2637363							Little

Entrez PubMec Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
LinkOut
Cubby

Related Resources
Order Documents
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

h

Cyclic mechanical stretch induces VEGF and FGF-2 expression in pulmonary vascular smooth muscle cells.

Quinn TP, Schlueter M, Soifer SJ, Gutierrez JA.

Department of Pediatrics, University of California San Francisco, San Francisco, California 94143, USA. tpquinn@itsa.ucsf.edu

Vascular endothelial growth factor (VEGF) and basic (b) fibroblast growth factor (FGF-2/bFGF) are involved in vascular development and angiogenesis. Pulmonary artery smooth muscle cells express VEGF and FGF-2 and are subjected to mechanical forces during pulsatile blood flow. The effect of stretch on growth factor expression in these cells is not well characterized. We investigated the effect of cyclic stretch on the expression of VEGF and FGF-2 in ovine pulmonary artery smooth muscle cells. Primary confluent cells from 6-wk-old lambs were cultured on flexible silicon membranes and subjected to cyclic biaxial stretch (1 Hz; 5-25% stretch; 4-48 h). Nonstretched cells served as controls. Expression of VEGF and FGF-2 was determined by Northern blot analysis. Cyclic stretch induced expression of both VEGF and FGF-2 mRNA in a time- and amplitude-dependent manner. Maximum expression was found at 24 h and 15% stretch (VEGF: 1.8-fold; FGF-2: 1.9-fold). These results demonstrate that mechanical stretch regulates VEGF and FGF-2 gene expression, which could play a role in pulmonary vascular development or in postnatal pulmonary artery function or disease.

PMID: 11943652 [PubMed - indexed for MEDLINE]

Display Abstract	Charm	20 👻	Sort ₩	Send to	Text •

Write to the Help Desk

NCBI | NLM | NIH

Department of Health & Human Services

Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50

С

cb hgeeefcgc eeebbe b







Entrez	PubMed	Nucleotide	Protein	Genome	Structure		PMC	Journals	Books
~ 1 ln.	ubMed	for					Go	Clear	
		Limits	Previe	w/Index	History	Clipt	oard	Detail	S
About Entrex		Display Abst	ract	: 0000 <b>0</b>	how: 20	Sort	Ser	id to Text	

Text Version

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services Journals Database MeSH Database Single Citation Matcher **Batch Citation Matcher** Clinical Queries LinkOut Cubby

Related Resources Order Documents NLM Catalog NLM Gateway TOXNET Consumer Health Clinical Alerts ClinicalTrials.gov PubMed Central

1: Circ Res. 2002 Apr 5;90(6):671-7.

Related Articles, Links

FREE full text article at circres ahajournals org

Autocrine regulation of myocyte Cx43 expression by VEGF.

Pimentel RC, Yamada KA, Kleber AG, Saffitz JE.

Department of Medicine, Washington University School of Medicine, St Louis, MO, USA.

Cardiac myocytes can rapidly adjust their expression of gap junction channel proteins in response to changes in load. Previously, we showed that after only 1 hour of linear pulsatile stretch (110% of resting cell length; 3 Hz), expression of connexin43 (Cx43) by cultured neonatal rat ventricular myocytes is increased by approximately 2-fold and impulse propagation is significantly more rapid. In the present study, we tested the hypothesis that vascular endothelial growth factor (VEGF), acting downstream of transforming growth factor-beta (TGF-beta), mediates stretch-induced upregulation of Cx43 expression by cardiac myocytes. Incubation of nonstretched cells with exogenous VEGF (100 ng/mL) or TGF-beta (10 ng/mL) for 1 hour increased Cx43 expression by approximately 1.8-fold, comparable to that observed in cells subjected to pulsatile stretch for 1 hour. Stretch-induced upregulation of Cx43 expression was blocked by either anti-VEGF antibody or anti-TGF-beta antibody. Stretch-induced enhancement of conduction was also blocked by anti-VEGF antibody. ELISA assay showed that VEGF was secreted into the culture medium during stretch. Furthermore, stretch-conditioned medium stimulated Cx43 expression in nonstretched cells. This effect was also blocked by anti-VEGF antibody. Upregulation of Cx43 expression stimulated by exogenous TGF-beta was blocked by anti-VEGF antibody, but VEGF-stimulation of Cx43 expression was not blocked by anti-TGF-beta antibody. Thus, stretch-induced upregulation of Cx43 expression is mediated, at least in part, by VEGF, which acts downstream of TGF-beta. Because the cultures contained only approximately 5% nonmyocytic cells, these results indicate that myocyte-derived VEGF, secreted in response to stretch, acts in an autocrine fashion to enhance intercellular coupling.

PMID: 11934834 [PubMed - indexed for MEDLINE]

Display Abstract	Show:	20 🔻	Sort ☀	Send to Text

Write to the Help Desk NCBI | NLM | NIH Department of Health & Human Services

h

cb

h g е e fcg c

e e e

b b e

b C







Entrez	PubMed	Nucleotide	Protein	emons	Structur	- 13,3,101	PMC	Journals	Books
Search	PubMed	for					Go	Clear	
		Limits	Previe	w/index	History	y Cl	ipboard	Deta	ails
About Sote	10.7	Display Abs	tract		Show: 20	<ul><li>Sort</li></ul>	▼ Ser	id to Text	8

Text Version

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services Journals Database MeSH Database Single Citation Matcher **Batch Citation Matcher** Clinical Queries LinkOut Cubby

Related Resources Order Documents **NLM Catalog NLM Gateway** TOXNET Consumer Health Clinical Alerts ClinicalTrials.gov PubMed Central

**1:** Chin Med J (Engl). 2001 May;114(5):517-9.

Related Articles, Links

EMO LINKOUT

 ${f V}$ ascular endothelial growth factor mRNA and its protein expression in decidua after terminating early pregnancy by mifepristone plus misoprostol.

Huang L, Shi Y.

Women's Hospital, School of Medicine, Zhejiang University, Hangzhou 310006, China. hlili@mail.hz.zj.cn

OBJECTIVE: To investigate the action of mifepristone plus misoprostol on decidua at the level of vascular endothelial growth factor (VEGF) mRNA and its protein expression, as well as the mechanism of prolonged uterine hemorrhage after terminating early pregnancy with these drugs. METHODS: Forty-five decidua specimens were obtained from 45 pregnant women with amenorrhea of 6-7 weeks' duration, in which 15 women were treated with mifepristone and 15 were given mifepristone plus misoprostol. Enzyme-linked immunosorbant assay (ELISA) and reverse transcription-polymerase chain reaction (RT-PCR) were used to detect VEGF protein and mRNA levels in decidua. RESULTS: In all three groups, only the VEGF121 amplification product of 452 bp was visualized. The mRNA and protein levels of VEGF showed no significant differences among the three groups (P > 0.05). CONCLUSION: In humans, early decidua VEGF121 mRNA is the main isoform. The action of mifepristone plus misoprostol on blood vessels in human decidua may be medicated by some factors other than VEGF.

PMID: 11780417 [PubMed - indexed for MEDLINE]

<b>Display</b> Abstract ⊮	Show: 20 Sort	Send to Text
---------------------------	---------------	--------------

Write to the Help Desk NCBI | NLM | NIH Department of Health & Human Services Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50

h

cb

h g e e fcg c b e

b C







Entrez	PubMed	Nucleotide	Protein	Genome	Structure	MIMO	PMC	Journals	Books
Search	PubMed	foi					Go	Clear	
		Limits	<b>~</b> .	w/Index	History	Clip	board	Deta	is
		Display Abs	tract	- S	how: 20	ort :	<ul><li>Sen</li></ul>	d to Text	

Text Version

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
LinkOut
Cubby

Related Resources
Order Documents
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

h

1: Acta Physiol Scand. 2001 Dec; 173(4):359-68.

Related Articles, Links



Modifications of microvascular filtration capacity in human limbs by training and electrical stimulation.

Brown MD, Jeal S, Bryant J, Gamble J.

School of Sport and Exercise Sciences, University of Birmingham, UK.

This study investigated whether an increase in microvascular surface area as a result of endurance training, which increases human skeletal muscle capillarity, would translate to greater capacity for fluid filtration compared with strength training, which does not affect capillary supply. Values for filtration capacity, Kf, derived from the slope of calf volume change, Jy, measured by venous occlusion plethysmography, against cuff pressure during a protocol of small cumulative pressure steps, were significantly higher in endurance athletes  $(5.78 + - 0.88 \text{ mL min}(-1) 100 \text{ mL}(-1) \text{ mmHg}(-1) \times 10(-3)$ , P < 0.05) than controls (3.38 +/- 0.32 mL min(-1) 100 mL(-1) mmHg(-1) x 10 (-3) whereas strength-trained athletes had values similar to control (4.08 +/-0.56 mL min(-1) 100 mL(-1) mmHg(-1) x 10(-3), ns), suggesting that surface area is important. However, when sedentary subjects underwent either a 4week unilateral dynamic plantarflexion training programme (70% peak power, 20 min day(-1), 5 days week(-1) or a calf muscle electrical stimulation programme (8 Hz, 3 x 20 min day(-1), 5 days week(-1), neither of which caused limb blood flow to alter after training nor would be expected to increase capillarity, only the stimulation group showed a significant increase in Kf (6.68 +/- 0.62 mL min(-1) 100 mL(-1) mmHg(-1) x 10(-3) post-training vs. 3.38 +/- 0.38 pre-training, P < 0.05). This may be because stimulation enhances perfusion preferentially to glycolytic fibres, or maintains high levels of vascular endothelial growth factor (VEGF) or changes lymph clearance.

PMID: 11903127 [PubMed - indexed for MEDLINE]

Dientay Abetraet		100	[C-4		Total
Display Abstract *	Show:	20 <b>*</b>	Sort	send to	lext
		7,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1	22222	Ø

Write to the Help Desk

NCBI | NLM | NIH

Department of Health & Human Services

Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23-2004-06:26:50

c







Entrez	PubMed	Nucleotide	Protein	Genome	Structi			MC	Journals	: Bo	oks
Search Pu	ıbMed	for						Go	Clear		
		Limits	Previe	w/index	Histor	ry	Clipbo	ard		Details	
About Entrez		Display Abs	tract	<b>*</b> S	Show: 20	Sort		Sen		ext	

Text Version

1: Circulation. 1999 May 25;99(20):2682-7.

Related Articles, Links

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
LinkOut
Cubby

Related Resources
Order Documents
NLM Catalog
NLM Gafeway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

#### Comment in:

• Circulation, 1999 May 25;99(20):2614-6.

FREE full text article at circ.ahajournals.org

Establishment of a simple and practical procedure applicable to therapeutic angiogenesis.

Kanno S, Oda N, Abe M, Saito S, Hori K, Handa Y, Tabayashi K, Sato Y.

Department of Vascular Biology, Institute of Development, Aging, and Cancer, Tohoku University, Sendai, Japan.

BACKGROUND: Therapeutic angiogenesis is thought to be beneficial for serious ischemic diseases. This investigation was designed to establish a simple and practical procedure applicable to therapeutic angiogenesis. METHODS AND RESULTS: When cultured skeletal muscle cells were electrically stimulated at a voltage that did not cause their contraction, vascular endothelial growth factor (VEGF) mRNA was augmented at an optimal-frequency stimulation. This increase of VEGF mRNA was derived primarily from transcriptional activation. Electrical stimulation increased the secretion of VEGF protein into the medium. This conditioned medium then augmented the growth of endothelial cells. The effect of electrical stimulation was further confirmed in a rat model of hindlimb ischemia. The tibialis anterior muscle in the ischemic limb was electrically stimulated. The frequency of stimulation was 50 Hz and strength was 0.1 V, which was far below the threshold for muscle contraction. After a 5-day stimulation, there was a significant increase in blood flow within the muscle. Immunohistochemical analysis revealed that VEGF protein was synthesized and capillary density was significantly increased in the stimulated muscle. Rats tolerated this procedure very well, and there was no muscle contraction, muscle injury, or restriction in movement. CONCLUSIONS: We propose this procedure as a simple and practical method of therapeutic angiogenesis.

PMID: 10338463 [PubMed - indexed for MEDLINE]

Display Abstract	Show:	20 🕶	Sort •	Send to	Text ▼

Write to the Help Desk

NCBI | NLM | NIH

Department of Health & Human Services

Privacy Statement | Freedom of Information Act | Disclaimer

C

h cb hg e e e fcg c e e e b b e b







Entrez	PubMed	Nucleotide	Protein	Genome	Structure	MIMO	PMC	Journals	Book
Search P	ubMed	for					Go	Clear	
		Limits	Previe	w/Index	History	Clip	board	Deta	ils
		Display Abs	tract	▼ S	how: 20 💌		- Sen	d to Text	

Text Version

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
LinkOut
Cubby

Related Resources
Order Documents
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

1: Am J Physiol. 1995 Nov;269(5 Pt 2):H1827-31.

Related Articles, Links

VEGF gene expression is upregulated in electrically stimulated rat skeletal muscle.

Hang J, Kong L, Gu JW, Adair TH.

Department of Physiology and Biophysics, University of Mississippi Medical Center, Jackson 39216-4505, USA.

Vascular endothelial growth factor (VEGF; also called vascular permeability factor) is a secreted mitogen with distinct target cell specificity for vascular endothelial cells. Hypoxia upregulates VEGF expression, making it a likely mediator of the angiogenesis that occurs in poorly perfused tissues. The purpose of this study was to determine whether VEGF gene expression is upregulated in chronically stimulated skeletal muscles, where hypoxia is thought to trigger the growth of blood vessels. The right anterior tibialis and extensor digitorum longus muscles of 12 rats were stimulated electrically (10 Hz, 300 microseconds pulses) for up to 21 days by way of the peroneal motor nerve. The contralateral muscles served as control. Northern analysis showed that VEGF mRNA levels increased by approximately sixfold after 4 days of stimulation and then decreased gradually over the next several days. VEGF mRNA levels were still elevated by two- to threefold after 21 days of stimulation. Higher VEGF mRNA levels in the early stages of muscle stimulation and gradually decreasing levels in later stages are consistent with a metabolic hypothesis in which tissue oxygenation controls VEGF expression. These studies support the hypothesis that VEGF has a physiological role in promoting angiogenesis in stimulated skeletal muscle.

PMID: 7503283 [PubMed - indexed for MEDLINE]

Display Abstract *	Show:	20 👻	Sort	Send to Text -

Write to the Help Desk

NCBI | NLM | NIH

Department of Health & Human Services

Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50

Related Articles, Links







Genoms OMIM PubMed Nucleotide Protein Structure PMC Journals Books Search PubMed Go Clear for Hz AND VEGF Clipboard Limits Preview/Index History Details Show: |500 | Sort Display Summary Send to Text About Entrez Items 1 - 14 of 14 One page. Text Version 1: Petersen W. Varoga D. Zantop T. Hassenpflug J. Mentlein R. Pufe T. Related Articles, Links Cyclic strain influences the expression of the vascular endothelial growth Entrez PubMed factor (VEGF) and the hypoxia inducible factor 1 alpha (HIF-1alpha) in Overview tendon fibroblasts. Help | FAQ Tutorial J Orthop Res. 2004 Jul;22(4):847-53. New/Noteworthy PMID: 15183444 [PubMed - indexed for MEDLINE] E-Utilities 2: Chen YJ, Wurtz T, Wang CJ, Kuo YR, Yang KD, Huang HC, Wang Related Articles, Links **PubMed Services** Journals Database Recruitment of mesenchymal stem cells and expression of TGF-beta 1 and MeSH Database VEGF in the early stage of shock wave-promoted bone regeneration of Single Citation Matcher segmental defect in rats. Batch Citation Matcher Clinical Queries J Orthop Res. 2004 May;22(3):526-34. LinkOut PMID: 15099631 [PubMed - indexed for MEDLINE] Cubby 3: Wang FS, Wang CJ, Chen YJ, Chang PR, Huang YT, Sun YC. Related Articles, Links Huang HC, Yang YJ, Yang KD. Related Resources Order Documents Ras induction of superoxide activates ERK-dependent angiogenic **NLM Catalog** transcription factor HIF-1alpha and VEGF-A expression in shock wave-**NLM Gateway** TOXNET stimulated osteoblasts. Consumer Health J Biol Chem. 2004 Mar 12;279(11):10331-7. Epub 2003 Dec 16. Clinical Alerts PMID: 14681237 [PubMed - indexed for MEDLINE] ClinicalTrials.gov PubMed Central 4: Ye XJ, Wang LJ, Lin MF, Ding W. Related Articles, Links The clinical significance of angiogenesis in the bone marrow of acute leukemia patients] Zhonghua Nei Ke Za Zhi. 2003 Jul;42(7):486-9. Chinese. PMID: 12921610 [PubMed - in process] 5: Milkiewicz M, Hudlicka O, Verhaeg J, Egginton S, Brown MD. Related Articles, Links Differential expression of Flk-1 and Flt-1 in rat skeletal muscle in response to chronic ischaemia: favourable effect of muscle activity. Clin Sei (Lond). 2003 Oct; 105(4):473-82. PMID: 12780346 [PubMed - indexed for MEDLINE] 6: Shin HY, Smith ML, Toy KJ, Williams PM, Bizios R, Gerritsen ME. Related Articles, Links VEGF-C mediates cyclic pressure-induced endothelial cell proliferation. Physiol Genomics. 2002 Dec 3;11(3):245-51. PMID: 12388793 [PubMed - indexed for MEDLINE] 7: Petersen W. Pufe T. Kurz B. Mentlein R. Tillmann B. Related Articles, Links Angiogenesis in fetal tendon development: spatial and temporal expression of the angiogenic peptide vascular endothelial cell growth factor.

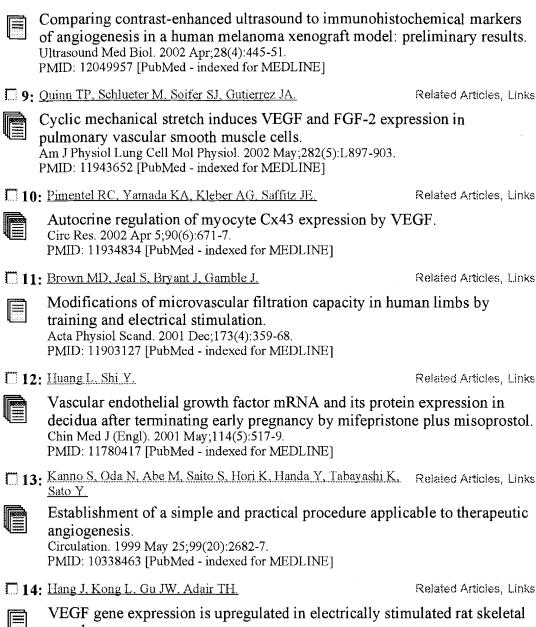
Anat Embryol (Berl). 2002 Jul;205(4):263-70. Epub 2002 Jun 06.

8: Forsberg F, Dicker AP, Thakur ML, Rawool NM, Liu JB, Shi WT,

PMID: 12136256 [PubMed - indexed for MEDLINE]

 $h \hspace{1.5cm} \hbox{cb} \hspace{1.5cm} \hbox{h} \hbox{g} \hspace{1.5cm} \hbox{e} \hspace{1.5cm} \hbox{e} \hspace{1.5cm} \hbox{fcg} \hspace{1.5cm} \hbox{e} \hspace{1.5cm} \hbox{ch} \hspace{1.5cm} \hbox{b} \hspace{1.5cm} \hbox{e}$ 

Nazarian LN.



muscle. Am J Physiol. 1995 Nov;269(5 Pt 2):H1827-31.

PMID: 7503283 [PubMed - indexed for MEDLINE]

Show: 500 Sort Display Summary Send to Text

> Write to the Help Desk NCBI | NLM | NIH Department of Health & Human Services Privacy Statement | Freedom of Information Act | Disclaimer

> > Nov 23 2004 06:26:50

h







Entrez

PubMed

Nucleotide

Protein

Genome

Structure

OMIM

PMC

Go

Journals Books

Search PubMed

for

for Hertz AND VEGF Preview/Index

History

Clipboard

– Details

Clear

Limits
No items found.

About Entrez

**Text Version** 

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Gueries
LinkOut
Cubby

Related Resources
Order Documents
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

Write to the Help Desk

NCBI | NLM | NIH

Department of Health & Human Services

Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50

cb hgeeefcg

h

e ch

b e







				- 0					
Entrez	PubMed	Nucleotide	Protein	Genome	Structure	MIMO	PMC	Journals	Book
Search	PubMed	for		-			Go	Clear	
		Limits	Previe	w/Index	History	Clip	board	Detai	ls
Ahoré Cer	koz	Display Abst	ract	SI	how: 20 💌	Sort	- Sen	d to Text	

Text Version

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
LinkOut
Cubby

Related Resources
Order Documents
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

1: J Orthop Res. 2004 May;22(3):526-34.

Related Articles, Links

## FULL TEXT ARTICLE

Recruitment of mesenchymal stem cells and expression of TGFbeta 1 and VEGF in the early stage of shock wave-promoted bone regeneration of segmental defect in rats.

Chen YJ, Wurtz T, Wang CJ, Kuo YR, Yang KD, Huang HC, Wang FS.

Department of Orthopedic Surgery, Chang Gung University, Linkou, Taiwan.

Extracorporeal shock wave (ESW) treatment has recently been established as a method to enhance bone repair. Here, we reported that ESW-promoted healing of segmental defect via stimulation of mesenchymal stem cell recruitment and differentiation into bone forming cells. Rats with a segmental femoral defect were exposed to a single ESW treatment (0.16 mJ/mm(2), 1 Hz, 500 impulses). Cell morphology and histological changes in the defect region were assessed 3, 7, 14, and 28 days post-treatment. Presence of mesenchymal stem cell was assayed by immuno-staining for RP59, a recently discovered marker, and also production of TGF-beta 1 and VEGF was monitored. ESW treatment increased total cell density and the proportion of RP59 positive cells in the defect region. High numbers of round- and cuboidal-shaped cells strongly expressing RP59 were initially found. Later, the predominant cell type was spindle-shaped fibroblastic cells, subsequently, aggregates of osteogenic and chondrogenic cells were observed. Histological observation suggested that bone marrow stem cells were progressively differentiated into osteoblasts and chondrocytes. RP59 staining was initially intense and decreased with the appearance of expression depended on the differentiation states of osteogenic and chondrogenic cells during the regeneration phase. Mature chondrocytes and osteoblasts exhibited only slight RP59 immuno-reactivity. Expression of TGF-beta 1 and VEGF-A mRNA in the defect tissues was also significantly increased (P<0.05) after ESW treatment as determined by RT-PCR. Intensive TGF-beta 1 immuno-reactivity was induced immediately, whereas a lag period was observed for VEGF-A. Chondrocytes and osteoblasts at the junction of ossified cartilage clearly exhibited VEGF-A expression. Our findings suggest that recruitment of meseoblasts at the junction of ossified cartilage clearly exhibited mesenchymal stem cells is a critical step in bone reparation that is enhanced by ESW treatment. TGF-beta 1 and VEGF-A are proposed to play a chemotactic and mitogenic role in recruitment and differentiation of mesenchymal stem cells.

PMID: 15099631 [PubMed - indexed for MEDLINE]

h cb hg e e e fcg c e e e b b e b c







				\$56 - 300s.100 dudt		A0000 A000-00	of Me	edicine <b>E</b>	N. S. C.	
Entrez F	<sup>a</sup> ubMed	Nuc	ebitoe	Protein	Genome	Structure	OMIM	PMC	Journals	Book
Search Publ	∕led		fc	or TE-85				Go	Clear	
		Ł.	imits	Previe	ew/Index	History	Clip	pboard	Deta	ils
		Displ	ay Su	mmary		Show: 500	Sort	▼ Sen	d to Text	
About Entrez		Items	1 - 81 c	of 81	eterate eta ata ata uta uta uta uta <del>uta araba</del> .	***************************************	Products to the second section of the second		One	page
Text Version		□1:	Yoshiol Dillingh	ka H. Stevens nam MF, Win	s K. Hargrea nalski CS, La	ves BA, Steines l	D, Genovese	<u>M</u> , R	elated Articles	
Entrez PubMe Overview Help   FAQ Tutorial New/Noteworthy E-Utilities	( ) .	<b>L</b>	Magne betwee FSE in correla J Magn	etic resonar en fat-supp naging, and tion with a	nce imagin ressed thre I fat-suppr arthroscopy ng. 2004 No	eg of articular of the eedimensional ressed three-disy.	I SPGR im	aging, fa	at-suppresse	ed
PubMed Servic Journals Database MeSH Database Single Citation M Batch Citation M Clinical Queries LinkOut Cubby	se Hatcher alcher alcher		HH. An TC. Osteog protein J Bone J Jan;86-A	genic activins (BMPs). Joint Surg And (1):141.	Vanichakar ty of the fo	Haydon RC, Penn P. Szatkowski ourteen types of ;85-A(8):1544-5;	JP. Park JY, of human t  2. Erratum in	. <u>He</u> oone mor	- •	
Order Document NLM Catalog NLM Gateway TOXNET Consumer Healtl Clinical Alerts ClinicalTrials.gov PubMed Central	h		Mecoull Sutkows Prostat regulat osteosa Anticano	W. Pritchard ski DM. Teaton e-specific a ion and inharcoma cell cer Res. 2002	d GJ, Becker er C. Neuban antigen (Phibitory eff s. Sep-Oct;22	SA)-mediated fects of LY312	Little SP, proliferati 2340 in HO	on, andro		
		□ <b>4</b> :	Jia SF, Z	welling LA.	McWatters	A, An T, Kleiner	man ES.	Re	elated Articles,	Links
		[[::::::::::::::::::::::::::::::::::::	human J Exp Th	osteosarco ner Oncol. 20	ma cells. 02 Jan-Feb;2	s the cytotoxic 2(1):27-36. exed for MEDLIN		of etoposi	de against	
		<b>5</b> :	<u>Bodo M.</u> Stabellin	, Lilli C, Bell ii G, Bellocel	ucci C, Cari no S, Baldu	nci P, Calvitti M, cci C, Carinci F,	Pezzetti F, Baroni T.	Re	lated Articles,	Links
		) ]	phenoty Mol Med	yping and c d. 2002 Jul;8(	lifferentia (7):393-404.	or autocrine lo tion. xed for MEDLIN		s human	osteosarcor	na
		<b>6:</b> ½	Taydon I A, Peabo	RC, Zhou L, ody T, Monta	Feng T, Bre g A, Simon	yer B, Cheng H, MA, He TC.	Jiang W, Ish	ukawa Re	lated Articles,	Links
			Nuclear numan Clin Can	r receptor a osteosarco cer Res. 2002	agonists as ma. 2 May;8(5):1	potential diffe		therapy	agents for	

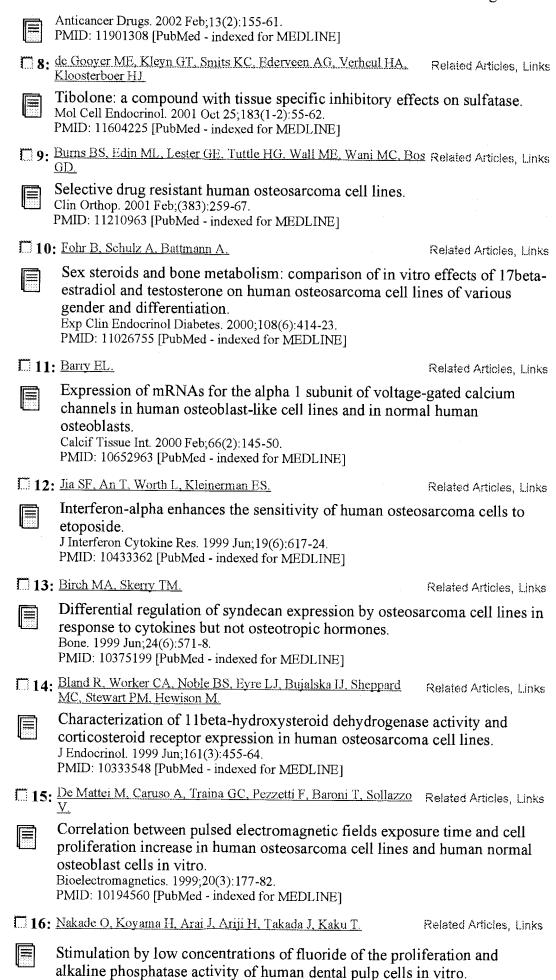
Eradication of osteosarcoma lung metastasis using intranasal gemcitabine.

e ch

7: Jia SF, Worth LL, Turan M, Duan Xp XP, Kleinerman ES.

e fcg

Related Articles, Links



Related Articles, Links

Arch Oral Biol. 1999 Jan;44(1):89-92. PMID: 10075154 [PubMed - indexed for MEDLINE] 17: Kellenberger S. Muller K. Richener H. Bilbe G. Related Articles, Links Formoterol and isoproterenol induce c-fos gene expression in osteoblastlike cells by activating beta2-adrenergic receptors. Bone. 1998 May; 22(5):471-8. PMID: 9600780 [PubMed - indexed for MEDLINE] 18: Goren D, Grob M, Lorenzoni P, Burger MM. Related Articles, Links Human bone cells stimulate the growth of human breast carcinoma cells. = Tumour Biol. 1997;18(6):341-9. PMID: 9372867 [PubMed - indexed for MEDLINE] 19: Onishi T, Zhang W, Cao X, Hruska K. Related Articles, Links The mitogenic effect of parathyroid hormone is associated with E2Fdependent activation of cyclin-dependent kinase 1 (cdc2) in osteoblast precursors. J Bone Miner Res. 1997 Oct;12(10):1596-605. PMID: 9333120 [PubMed - indexed for MEDLINE] 20: Hayden JM, Strong DD, Baylink DJ, Powell DR, Sampath TK. Related Articles, Links Mohan S. Osteogenic protein-1 stimulates production of insulin-like growth factor binding protein-3 nuclear transcripts in human osteosarcoma cells. Endocrinology. 1997 Oct; 138(10): 4240-7. PMID: 9322936 [PubMed - indexed for MEDLINE] 21: Link TM, Lindner N, Haeussler M, Reimer P, Allkemper T, Jerosch Related Articles, Links J. Peterfy C. Majumdar S. Peters PE. Artificially produced cartilage lesions in small joints: detection with optimized MRI-sequences. Magn Reson Imaging. 1997;15(8):949-56. PMID: 9322214 [PubMed - indexed for MEDLINE] 22: Kenny JS, Kisaalita WS, Rowland G, Thai C, Foutz T. Related Articles, Links Quantitative study of calcium uptake by tumorigenic bone (TE-85) and neuroblastoma x glioma (NG108-15) cells exposed to extremely-lowfrequency (ELF) electric fields. FEBS Lett. 1997 Sep 8;414(2):343-8. PMID: 9315715 [PubMed - indexed for MEDLINE] 23: Chaudhary LR, Avioli LV. Related Articles, Links Activation of extracellular signal-regulated kinases 1 and 2 (ERK1 and ERK2) by FGF-2 and PDGF-BB in normal human osteoblastic and bone marrow stromal cells: differences in mobility and in-gel renaturation of ERK1 in human, rat, and mouse osteoblastic cells. Biochem Biophys Res Commun. 1997 Sep 8;238(1):134-9. PMID: 9299466 [PubMed - indexed for MEDLINE] 24: Star-Lack J. Vigneron DB, Pauly J, Kurhanewicz J, Nelson SJ Related Articles, Links Improved solvent suppression and increased spatial excitation bandwidths for three-dimensional PRESS CSI using phase-compensating spectral/spatial spin-echo pulses. J Magn Reson Imaging. 1997 Jul-Aug;7(4):745-57. PMID: 9243397 [PubMed - indexed for MEDLINE]

h cb hg e e e fcg e ch b e

25: Behr JC, Hartley LL, York DK, Brown DD, Kerber RE.

h

cb

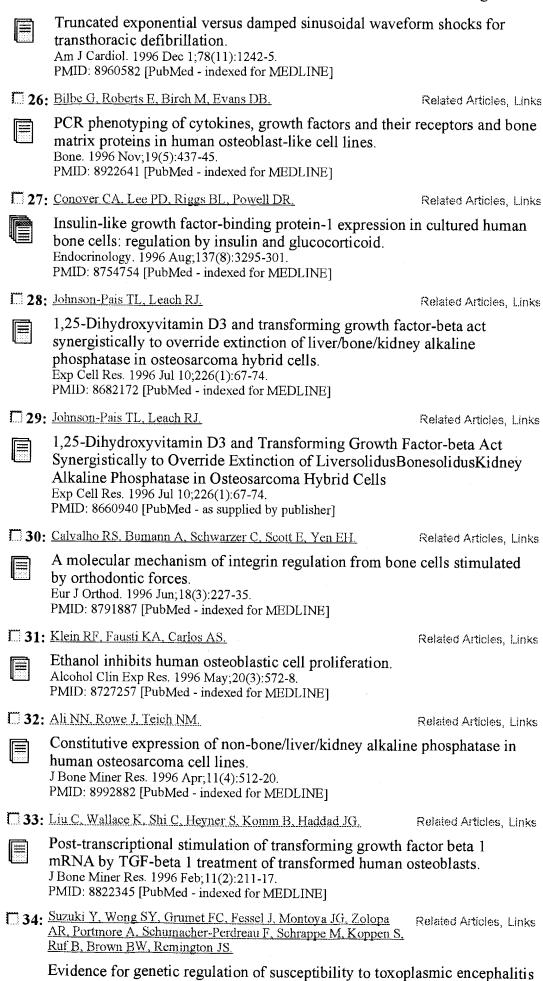
h g

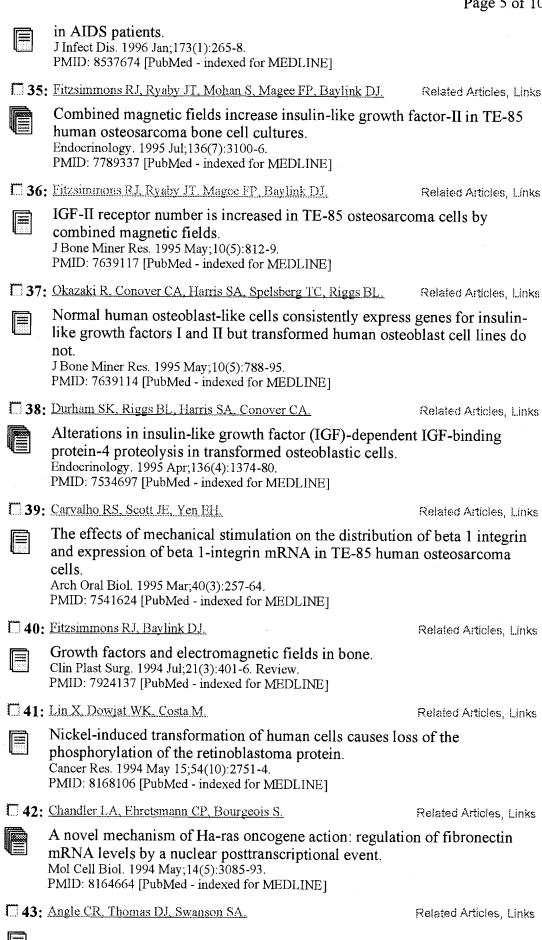
e e

e fcg

e ch

bе





Osteotoxicity of cadmium and lead in HOS TE 85 and ROS 17/2.8 cells:

relation to metallothionein induction and mitochondrial binding.

cb h g e e e fcg e ch b e

Biometals. 1993 Autumn;6(3):179-84.

PMID: 8400764 [PubMed - indexed for MEDLINE] 44: Farley JR, Hall SL, Herring S. Related Articles, Links Calcitonin acutely increases net 45Ca uptake and alters alkaline phosphatase specific activity in human osteosarcoma cells. Metabolism. 1993 Jan;42(1):97-104. PMID: 8383275 [PubMed - indexed for MEDLINE] 45: Hassager C, Fitzpatrick LA, Spencer EM, Riggs BL, Conover CA, Related Articles, Links Basal and regulated secretion of insulin-like growth factor binding proteins in osteoblast-like cells is cell line specific. J Clin Endocrinol Metab. 1992 Jul;75(1):228-33. PMID: 1377704 [PubMed - indexed for MEDLINE] 1 46: Finkelman RD, Mohan S, Linkhart TA, Abraham SM, Boussy JP, Related Articles, Links Baylink DJ. PTH stimulates the proliferation of TE-85 human osteosarcoma cells by a mechanism not involving either increased cAMP or increased secretion of IGF-I, IGF-II or TGF beta. Bone Miner. 1992 Feb;16(2):89-100. PMID: 1315602 [PubMed - indexed for MEDLINE] 47: Kumar CC, Chang C. Related Articles, Links Human smooth muscle myosin light chain-2 gene expression is repressed in ras transformed fibroblast cells. Cell Growth Differ. 1992 Jan;3(1):1-10. PMID: 1599878 [PubMed - indexed for MEDLINE] 48: Kyeyune-Nyombi E. Lau KH, Baylink DJ, Strong DD. Related Articles, Links 1,25-Dihydroxyvitamin D3 stimulates both alkaline phosphatase gene transcription and mRNA stability in human bone cells. Arch Biochem Biophys. 1991 Dec;291(2):316-25. PMID: 1952946 [PubMed - indexed for MEDLINE] 1 49: Jia SF, Kleinerman ES. Related Articles, Links Antitumor activity of TNF-alpha, IL-1, and IFN-gamma against three = human osteosarcoma cell lines. Lymphokine Cytokine Res. 1991 Aug; 10(4):281-4. PMID: 1932372 [PubMed - indexed for MEDLINE] 50: Lau KH, Yoo A, Wang SP. Related Articles, Links Aluminum stimulates the proliferation and differentiation of osteoblasts in vitro by a mechanism that is different from fluoride. Mol Cell Biochem. 1991 Jul 10;105(2):93-105. PMID: 1922012 [PubMed - indexed for MEDLINE] 51: Clezardin P. Seire CM, Trzeciak MC, Drouin J, Delmas PD. Related Articles, Links Thrombospondin binds to the surface of human osteosarcoma cells and mediates platelet-osteosarcoma cell interaction. Cancer Res. 1991 May 15;51(10):2621-7. PMID: 1708697 [PubMed - indexed for MEDLINE] 52: Farley JR, Wergedal JE, Hall SL, Herring S, Tarbaux NM. Related Articles, Links Calcitonin has direct effects on 3[H]-thymidine incorporation and alkaline

h cb h g e e fcg e ch b e e

phosphatase activity in human osteoblast-line cells.

Calcif Tissue Int. 1991 May; 48(5):297-301.

PMID: 2054713 [PubMed - indexed for MEDLINE]

h

cb

h g

e e

e fcg

e ch

b e

53: Sidhu MK, Fernandez C, Khan MY, Kumar S. Related Articles, Links Induction of morphological transformation, anchorage-independent growth and plasminogen activators in non-tumorigenic human osteosarcoma cells by lead chromate. Anticancer Res. 1991 May-Jun;11(3):1045-53. PMID: 1888137 [PubMed - indexed for MEDLINE] 54: Soman NR, Wogan GN, Rhim JS. Related Articles, Links TPR-MET oncogenic rearrangement: detection by polymerase chain reaction amplification of the transcript and expression in human tumor cell Proc Natl Acad Sci U S A. 1990 Jan;87(2):738-42. PMID: 2300559 [PubMed - indexed for MEDLINE] 55: Etienne MC, Fischel JL, Milano G, Formento P, Formento JL, Related Articles, Links Francoual M, Frenay M, Namer M. Steroid receptors in human osteoblast-like cells. Eur J Cancer. 1990;26(7):807-10. PMID: 2145899 [PubMed - indexed for MEDLINE] 56: Kveyune-Nyombi E, Lau KH, Baylink DJ, Strong DD. Related Articles, Links Stimulation of cellular alkaline phosphatase activity and its messenger RNA level in a human osteosarcoma cell line by 1,25-dihydroxyvitamin D3. Arch Biochem Biophys. 1989 Dec;275(2):363-70. PMID: 2596847 [PubMed - indexed for MEDLINE] 57: Randall JC, Morris DC, Zeiger S, Masuhara K, Tsuda T, Anderson Related Articles, Links HC. Presence and activity of alkaline phosphatase in two human osteosarcoma cell lines. J Histochem Cytochem. 1989 Jul;37(7):1069-74. PMID: 2659662 [PubMed - indexed for MEDLINE] 58: Farley JR, Kyeyune-Nyombi E, Tarbaux NM, Hall SL, Strong DD. Related Articles, Links Alkaline phosphatase activity from human osteosarcoma cell line SaOS-2: an isoenzyme standard for quantifying skeletal alkaline phosphatase activity in serum. Clin Chem. 1989 Feb;35(2):223-9. PMID: 2914365 [PubMed - indexed for MEDLINE] 59: Ikeda K, Weir EC, Mangin M. Dannies PS, Kinder B, Deftos LJ, Related Articles, Links Brown EM. Broadus AE. Expression of messenger ribonucleic acids encoding a parathyroid hormone-like peptide in normal human and animal tissues with abnormal expression in human parathyroid adenomas. Mol Endocrinol. 1988 Dec;2(12):1230-6. PMID: 3216862 [PubMed - indexed for MEDLINE] 60: Auffermann W, Clark OH, Thurnher S, Galante M, Higgins CB. Related Articles, Links Recurrent thyroid carcinoma: characteristics on MR images. Radiology. 1988 Sep; 168(3):753-7. PMID: 3406405 [PubMed - indexed for MEDLINE] 61: Murray E, Provvedini D, Curran D, Catherwood B, Sussman H, Related Articles, Links Manolagas S. Characterization of a human osteoblastic osteosarcoma cell line (SAOS-2) with high bone alkaline phosphatase activity.

J Bone Miner Res. 1987 Jun;2(3):231-8. PMID: 2843003 [PubMed - indexed for MEDLINE] 62: Franceschi RT, Linson CJ, Peter TC, Romano PR. Related Articles, Links Regulation of cellular adhesion and fibronectin synthesis by 1 alpha, 25dihydroxyvitamin D3. J Biol Chem. 1987 Mar 25;262(9):4165-71. PMID: 3470294 [PubMed - indexed for MEDLINE] 63: Tainsky MA, Shamanski FL, Blair D, Vande Woude G. Related Articles, Links Human recipient cell for oncogene transfection studies. Mol Cell Biol. 1987 Mar;7(3):1280-4. PMID: 3470599 [PubMed - indexed for MEDLINE] 64: Tsang KY, Warren RQ, Bishop L, Pathak S, Koger B, LaVia MF. Related Articles, Links Monoclonal antibodies to human osteosarcoma-associated antigen(s). J Natl Cancer Inst. 1986 Dec;77(6):1175-80. PMID: 3467110 [PubMed - indexed for MEDLINE] 65: Manishen WJ, Sivananthan K, Orr FW. Related Articles, Links Resorbing bone stimulates tumor cell growth. A role for the host microenvironment in bone metastasis. Am J Pathol. 1986 Apr; 123(1):39-45. PMID: 3457536 [PubMed - indexed for MEDLINE] 66: Bracke ME, Van Cauwenberge RM, Mareel MM. Related Articles, Links Interaction of malignant cells with salt-extracted cartilage in vitro. Cancer Res. 1984 Jan;44(1):297-304. PMID: 6690041 [PubMed - indexed for MEDLINE] 67: Diddens H, Niethammer D, Jackson RC. Related Articles, Links Patterns of cross-resistance to the antifolate drugs trimetrexate, metoprine, homofolate, and CB3717 in human lymphoma and osteosarcoma cells resistant to methotrexate. Cancer Res. 1983 Nov;43(11):5286-92. PMID: 6225514 [PubMed - indexed for MEDLINE] 68: Tsang KY, Fudenberg HH, Sun DC, Pai GS, Bishop LR, Sager S. Related Articles, Links Cultivation of human osteosarcoma cell lines in serum-free hormone supplemented medium. In Vitro. 1983 Jul;19(7):515-21. PMID: 6575958 [PubMed - indexed for MEDLINE] 69: Toyama S. Related Articles, Links [Detection of human osteosarcoma-associated antigens by monoclonal antibodies Gan To Kagaku Ryoho. 1983 Apr;10(4 Pt 1):1013-20. Japanese. PMID: 6575722 [PubMed - indexed for MEDLINE] 70: Tsang KY, Hynes JB, Fudenberg HH. Related Articles, Links Effects of 5,8-dideazaisofolic acid (IAHQ) on human tumor cells in culture and on normal and tumor-bearing hamsters. Chemotherapy. 1982;28(4):276-82. PMID: 6956488 [PubMed - indexed for MEDLINE] 71: Tsang KY, Fudenberg HH, Gnagy MJ. Related Articles, Links

Osteosarcoma patients: isolation of serum antibodies by affinity

chromatography. J Natl Cancer Inst. 1981 Dec;67(6):1183-9. PMID: 6796743 [PubMed - indexed for MEDLINE] 72: Pauli BU, Memoli VA, Kuettner KE. Related Articles, Links Regulation of tumor invasion by cartilage-derived anti-invasion factor in J Natl Cancer Inst. 1981 Jul;67(1):65-73. PMID: 7019530 [PubMed - indexed for MEDLINE] 73: Takasugi M, Hardiwidjaja M, McAllister R, Peer M. Related Articles, Links Search for specificity in natural cell-mediated cytotoxicity. J Natl Cancer Inst. 1979 Dec;63(6):1299-304. PMID: 92584 [PubMed - indexed for MEDLINE] 74: Singh I. Tsang KY, Blakemore WS. Related Articles, Links A model for human osteosarcoma in hamsters. Clin Orthop. 1979 Oct; (144):305-10. PMID: 294956 [PubMed - indexed for MEDLINE] 75: Tsang KY, Singh I, Blakemore WS. Related Articles, Links Circulating immune complexes in human osteosarcoma. J Natl Cancer Inst. 1979 Apr;62(4):743-8. PMID: 285287 [PubMed - indexed for MEDLINE] 76: Howett MK, High CS, Rapp F. Related Articles, Links Production of plasminogen activator by cells transformed by herpesviruses. Cancer Res. 1978 Apr;38(4):1075-8. PMID: 205345 [PubMed - indexed for MEDLINE] 77: Singh I, Tsang KY, Blakemore WS. Related Articles, Links Effect of xenogeneic immune RNA on normal human lymphocytes against human osteosarcoma cells in vitro. J Natl Cancer Inst. 1977 Mar;58(3):505-10. PMID: 264978 [PubMed - indexed for MEDLINE] 78: Singh I, Hatheway JM, Tsang KY, Blakemore WS, McAllister RM. Related Articles, Links An animal model for human osteosarcoma. Surgery. 1977 Feb;81(2):168-75. PMID: 264708 [PubMed - indexed for MEDLINE] 79: Singh I, Tsang KY, Blakemore WS. Related Articles, Links Isolation and partial purification of plasma membrane-associated antigens from human osteosarcoma (TE-85) cells in tissue culture. Cancer Res. 1976 Nov;36(11 Pt 1):4130-6. PMID: 824049 [PubMed - indexed for MEDLINE] 80: Rhim JS, Kim CM, Arnstein P, Huebner RJ, Weisburger EK, Related Articles, Links Nelson Ress WA. Transformation of human osteosarcoma cells by a chemical carcinogen. J Natl Cancer Inst. 1975 Dec;55(6):1291-4. PMID: 813009 [PubMed - indexed for MEDLINE]

= activity in a line of human osteosarcoma cells. Int J Cancer. 1975 Oct 15;16(4):616-21. PMID: 1080752 [PubMed - indexed for MEDLINE]

The relationship between tumorigenicity, growth in agar and fibrinolytic

81: Jones PA, Rhim JS, Isaacs H Jr, McAllister RM.

Related Articles, Links







Entrez	PubMed	Nucleotide	Protein	Genome	Structur		PMC	Journals	Book
Search P	ubMed	for					Go	Clear	
		Limits	Previe	w/Index	History	, C	lipboard	Deta	ils
About Entrea	<u>.</u>	<b>Display</b> Abstr	act	S	how: 20	Sort	• Ser	d to Text	

Text Version

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

**PubMed Services** Journals Database MeSH Database Single Citation Matcher Batch Citation Matcher Clinical Queries LinkOut Cubby

Related Resources Order Documents **NLM Catalog NLM Gateway** TOXNET Consumer Health Clinical Alerts ClinicalTrials.gov PubMed Central

☐ 1: Bioelectromagnetics. 1999;20(3):177-82.

Related Articles, Links



Correlation between pulsed electromagnetic fields exposure time and cell proliferation increase in human osteosarcoma cell lines and human normal osteoblast cells in vitro.

De Mattei M, Caruso A, Traina GC, Pezzetti F, Baroni T, Sollazzo V.

Dipartimento di Morfologia ed Embriologia, Universita di Ferrara, Italy,

We have exposed cultured bone cells to a pulsed electromagnetic field (PEMF) for different times to find the minimal exposure time necessary to stimulate an increase of DNA synthesis. We used two different human osteosarcoma cell lines, TE-85 and MG-63, and human normal osteoblast cell (NHOC) obtained from surgical bone specimens. The cells were placed in multiwell plates and set in a tissue culture incubator between a pair of Helmoltz coils powered by a pulse generator (1.3-ms pulse, repeated at 75 Hz) for different periods of time. [3H]Thymidine incorporation was used to evaluate cell proliferation. The two osteosarcoma cell lines increase their thymidine incorporation when exposed to a PEMF for at least 30 min, both in a medium containing 10% fetal calf serum and in a serum-free medium. NHOC are known to increase their cell proliferation when exposed to PEMF but only if cultured in the presence of 10% fetal calf serum. In this experimental condition, three of the four cell lineages studied required at least 9 h of PEMF exposure to increase their DNA synthesis, whereas one cell lineage increased its cell proliferation after 6 h of PEMF exposure. Our observations confirm the hypothesis that the proliferative responses of NHOC and human osteosarcoma cell lines to PEMF exposure are quite different. Moreover, NHOC required minimal exposure times to PEMF to increase their cell proliferation, similar to that needed to stimulate bone formation in vivo.

PMID: 10194560 [PubMed - indexed for MEDLINE]

Display Abstract	Show: 20 🕶	Sort •	Send to Text	*

Write to the Help Desk NCBI | NLM | NIH Department of Health & Human Services Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50

C







Entrez	PubMed	Nucleotide	Protein	Genome	Structure	MIMO	PMC	Journals	Books
Search	PubMed	for					Go	Clear	
		Limits	Previe	w/Index	History	Clip	poard	Detail	s
Shout Cate	ran or	<b>Display</b> Abs	tract		Show: 20	Sort :	<ul><li>Sen</li></ul>	d to Text	

Text Version

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services Journals Database MeSH Database Single Citation Matcher Batch Citation Matcher **Clinical Queries** LinkOut Cubby

Related Resources Order Documents **NLM Catalog** NLM Gateway TOXNET Consumer Health Clinical Alerts ClinicalTrials.gov PubMed Central

**1:** Endocrinology. 2001 Feb; 142(2):959-62.

Related Articles, Links

FREE full text article at endo, endo journals, or g

Hypoxia induces vascular endothelial growth factor gene transcription in human osteoblast-like cells through the hypoxiainducible factor-2alpha.

Akeno N, Czyzyk-Krzeska MF, Gross TS, Clemens TL.

Division of Endocrinology and Department of Medicine, University of Cincinnati, Cincinnati, Ohio 45267, USA.

VEGF is produced by osteoblasts and has been postulated to function as an angiogenic stimulus during normal skeletal development and in fracture repair. In this study, we characterized the molecular mechanisms by which experimental hypoxia increases VEGF mRNA in human MG63 osteoblastlike cells. Exposure of MG63 cells to 1% O(2) for 24 h resulted in a four-fold increase in VEGF mRNA. Immunoblotting of nuclear extracts demonstrated a time-dependent increase in the level of the Hif-2alpha protein, which preceded the rise in VEGF mRNA. To determine the effect of hypoxia on VEGF gene transcription, MG63 cells were transiently transfected with a segment of the VEGF promoter construct fused to luciferase and then exposed to 1% O(2). Hypoxia induced VEGF promoter activity five-fold by 24 h. Forced expression of Hif-2alpha, but not Hif-1alpha, increased both basal and hypoxia induced VEGF promoter activity. By contrast, the ability of the VEGF reporter to respond to hypoxia or recombinant Hif-2alpha was abolished in cells transfected with a VEGF promoter construct containing a mutation in the hypoxia response element. In summary, exposure of osteoblast-like cells to hypoxia induces VEGF expression via induction of Hif-2alpha and transcriptional activation of the VEGF promoter.

PMID: 11159870 [PubMed - indexed for MEDLINE]

Display Abstract -	Show: 20 ▼ Sort ▼	Send to Text -

Write to the Help Desk NCBI | NLM | NIH Department of Health & Human Services Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23 2004 06:26:50

h







Entrez	PubMed	Nucleotide	Protein	Genome	Structure	MIMO	PMC	Journals	Books
Search P	ubMed	for					Go	Clear	
		Limits		w/Index	History	Clip	board	Detai	İs
About Cotras		Directors A hote	act	SI	how: 20 💌 S	sort :	▼ Sen	d to Text	

Text Version

Entrez PubMed
Overview
Help | FAQ
Tutorial
New/Noteworthy
E-Utilities

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
LinkOut
Cubby

Related Resources
Order Documents
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

1: Endocrinology. 2001 Feb; 142(2):959-62.

Related Articles, Links

fRIE full text article of ando.andojournals.org

Hypoxia induces vascular endothelial growth factor gene transcription in human osteoblast-like cells through the hypoxia-inducible factor-2alpha.

Akeno N, Czyzyk-Krzeska MF, Gross TS, Clemens TL.

Division of Endocrinology and Department of Medicine, University of Cincinnati, Cincinnati, Ohio 45267, USA.

VEGF is produced by osteoblasts and has been postulated to function as an angiogenic stimulus during normal skeletal development and in fracture repair. In this study, we characterized the molecular mechanisms by which experimental hypoxia increases VEGF mRNA in human MG63 osteoblastlike cells. Exposure of MG63 cells to 1% O(2) for 24 h resulted in a four-fold increase in VEGF mRNA. Immunoblotting of nuclear extracts demonstrated a time-dependent increase in the level of the Hif-2alpha protein, which preceded the rise in VEGF mRNA. To determine the effect of hypoxia on VEGF gene transcription, MG63 cells were transiently transfected with a segment of the VEGF promoter construct fused to luciferase and then exposed to 1% O(2). Hypoxia induced VEGF promoter activity five-fold by 24 h. Forced expression of Hif-2alpha, but not Hif-1alpha, increased both basal and hypoxia induced VEGF promoter activity. By contrast, the ability of the VEGF reporter to respond to hypoxia or recombinant Hif-2alpha was abolished in cells transfected with a VEGF promoter construct containing a mutation in the hypoxia response element. In summary, exposure of osteoblast-like cells to hypoxia induces VEGF expression via induction of Hif-2alpha and transcriptional activation of the VEGF promoter.

PMID: 11159870 [PubMed - indexed for MEDLINE]

Display Abstract	Show: 20 ¥ Sort •	Send to Text +

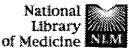
Write to the Help Desk
NCBI | NLM | NIH
Department of Health & Human Services
Privacy Statement | Freedom of Information Act | Disclaimer

Nov 23/2004/06/26/50

One page.







Entrez PubMed Nucleotide Protein Ganoms Structure OMIM PMC Journals Books Search | PubMed \* for human normal osteoblast cell AND electromagneti Clear Details

Limits Preview/Index History Clipboard

Display Summary

Items 1 - 2 of 2

Show: 20

Send to Text

Text Version

About Entrez

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services Journals Database MeSH Database Single Citation Matcher Batch Citation Matcher Clinical Queries LinkOut Cubby

Related Resources Order Documents NLM Catalog **NLM Gateway** TOXNET Consumer Health Clinical Alerts ClinicalTrials.gov PubMed Central

1: De Mattei M. Caruso A, Traina GC, Pezzetti F, Baroni T, Sollazzo Related Articles, Links Correlation between pulsed electromagnetic fields exposure time and cell proliferation increase in human osteosarcoma cell lines and human normal

osteoblast cells in vitro. Bioelectromagnetics. 1999;20(3):177-82. PMID: 10194560 [PubMed - indexed for MEDLINE]

2: Sollazzo V, Traina GC, DeMattei M, Pellati A, Pezzetti F, Caruso A. Related Articles, Links

Responses of human MG-63 osteosarcoma cell line and human osteoblastlike cells to pulsed electromagnetic fields.

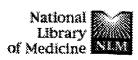
Bioelectromagnetics. 1997;18(8):541-7. PMID: 9383242 [PubMed - indexed for MEDLINE]

> Write to the Help Desk NCBI | NLM | NIH Department of Health & Human Services Privacy Statement | Freedom of Information Act | Disclaimer

> > Mov 23 2004 06:26:50







Entrez

PubMed

Nucleotide Protein

Genome

Structure

MIMO

PMC

Go

Journals

Books

Search PubMed

Limits

for PEMF AND VEGF Preview/Index

History

Clipboard

Clear

Details

No items found.

About Entrez

Text Version

Entrez PubMed Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

PubMed Services Journals Database MeSH Database Single Citation Matcher Batch Citation Matcher Clinical Queries LinkOut Cubby

Related Resources Order Documents **NLM Catalog** NLM Gateway TOXNET Consumer Health Clinical Alerts ClinicalTrials.gov PubMed Central

> Write to the Help Desk NCBI | NLM | NIH Department of Health & Human Services Privacy Statement | Freedom of Information Act | Disclaimer

> > Mov 23 2004 06:26:50







Entrez

PubMed

Nucleotide

Protein

Genome

Structure

OMIM

PMC

Go

Journals

Clear

Books

Search PubMed

for pulsed electromagnetic field AND VEGF Limits

Preview/Index

History

Clipboard

Details

No items found.

About Entrez

Text Version

Entrez PubMed

Overview Help | FAQ Tutorial New/Noteworthy E-Utilities

**PubMed Services** 

Journals Database McSH Database Single Citation Matcher Batch Citation Matcher Clinical Queries LinkOut Cubby

Related Resources

Order Documents **NLM Catalog NLM Gateway** TOXNET Consumer Health Clinical Alerts ClinicalTrials.gov PubMed Central

> Write to the Help Desk NCBI | NLM | NIH Department of Health & Human Services Privacy Statement | Freedom of Information Act | Disclaimer

> > Nov 23 2004 06:26:50

# Untitled

US20030109040 US20030153965 US20020009797

US20040005297 US20030233124

FILE 'ADISINSIGHT' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 Adis Data Information BV

FILE 'ADISNEWS' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 Adis Data Information BV

FILE 'AGRICOLA' ENTERED AT 15:19:42 ON 24 NOV 2004

FILE 'ANABSTR' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (c) 2004 THE ROYAL SOCIETY OF CHEMISTRY (RSC)

FILE 'ANTE' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 Cambridge Scientific Abstracts (CSA)

FILE 'AQUALINE' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 Cambridge Scientific Abstracts (CSA)

FILE 'AQUASCI' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT 2004 FAO (On behalf of the ASFA Advisory Board). All rights reserved.

FILE 'BIOBUSINESS' ENTERED AT 15:19:42 ON 24 NOV 2004 Copyright (c) 1998 The Thomson Corporation.

FILE 'BIOCOMMERCE' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 BioCommerce Data Ltd. Richmond Surrey, United Kingdom. All rights reserved

FILE 'BIOENG' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 Cambridge Scientific Abstracts (CSA)

FILE 'BIOSIS' ENTERED AT 15:19:42 ON 24 NOV 2004 Copyright (c) 2004 The Thomson Corporation.

FILE 'BIOTECHABS' ACCESS NOT AUTHORIZED

FILE 'BIOTECHDS' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 THE THOMSON CORPORATION

FILE 'BIOTECHNO' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 Elsevier Science B.V., Amsterdam. All rights reserved.

FILE 'CABA' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 CAB INTERNATIONAL (CABI)

FILE 'CANCERLIT' ENTERED AT 15:19:42 ON 24 NOV 2004

FILE 'CAPLUS' ENTERED AT 15:19:42 ON 24 NOV 2004 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT. PLEASE SEE "HELP USAGETERMS" FOR DETAILS. COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'CEABA-VTB' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (c) 2004 DECHEMA eV

FILE 'CEN' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2001 American Chemical Society (ACS)

FILE 'CIN' ENTERED AT 15:19:42 ON 24 NOV 2004 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT. PLEASE SEE "HELP USAGETERMS" FOR DETAILS. COPYRIGHT (C) 2004 American Chemical Society (ACS)

FILE 'CONFSCI' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 Cambridge Scientific Abstracts (CSA)

```
FILE 'CROPB' ENTERED AT 15:19:42 ON 24 NOV 2004
 COPYRIGHT (C) 2004 THE THOMSON CORPORATION
 FILE 'CROPU' ENTERED AT 15:19:42 ON 24 NOV 2004
 COPYRIGHT (C) 2004 THE THOMSON CORPORATION
 FILE 'DDFB' ENTERED AT 15:19:42 ON 24 NOV 2004
 COPYRIGHT (C) 2004 THE THOMSON CORPORATION
 FILE 'DDFU' ACCESS NOT AUTHORIZED
 FILE 'DGENE' ENTERED AT 15:19:42 ON 24 NOV 2004
 COPYRIGHT (C) 2004 THE THOMSON CORPORATION
 FILE 'DISSABS' ENTERED AT 15:19:42 ON 24 NOV 2004
 COPYRIGHT (C) 2004 ProQuest Information and Learning Company; All Rights Reserved.
 FILE 'DRUGB' ENTERED AT 15:19:42 ON 24 NOV 2004
 COPYRIGHT (C) 2004 THE THOMSON CORPORATION
 FILE 'DRUGMONOG2' ENTERED AT 15:19:42 ON 24 NOV 2004
 COPYRIGHT (C) 2004 IMSWORLD Publications Ltd
 FILE 'DRUGU' ENTERED AT 15:19:42 ON 24 NOV 2004
 COPYRIGHT (C) 2004 THE THOMSON CORPORATION
 FILE 'EMBAL' ENTERED AT 15:19:42 ON 24 NOV 2004
 COPYRIGHT (C) 2004 Elsevier Inc. All rights reserved.
 FILE 'EMBASE' ENTERED AT 15:19:42 ON 24 NOV 2004
 COPYRIGHT (C) 2004 Elsevier Inc. All rights reserved.
 FILE 'ESBIOBASE' ENTERED AT 15:19:42 ON 24 NOV 2004
 COPYRIGHT (C) 2004 Elsevier Science B.V., Amsterdam. All rights reserved.
 FILE 'FEDRIP' ENTERED AT 15:19:42 ON 24 NOV 2004
 FILE 'FOMAD' ENTERED AT 15:19:42 ON 24 NOV 2004
COPYRIGHT (C) 2004 Leatherhead Food Research Association
FILE 'FOREGE' ENTERED AT 15:19:42 ON 24 NOV 2004
COPYRIGHT (C) 2004 Leatherhead Food Research Association
FILE 'FROSTI' ENTERED AT 15:19:42 ON 24 NOV 2004
COPYRIGHT (C) 2004 Leatherhead Food Research Association
FILE 'FSTA' ENTERED AT 15:19:42 ON 24 NOV 2004
COPYRIGHT (C) 2004 International Food Information Service
FILE 'GENBANK' ENTERED AT 15:19:42 ON 24 NOV 2004
FILE 'HEALSAFE' ENTERED AT 15:19:42 ON 24 NOV 2004
COPYRIGHT (C) 2004 Cambridge Scientific Abstracts (CSA)
FILE 'IFIPAT' ENTERED AT 15:19:42 ON 24 NOV 2004
COPYRIGHT (C) 2004 IFI CLAIMS(R) Patent Services (IFI)
FILE 'IMSDRUGNEWS' ENTERED AT 15:19:42 ON 24 NOV 2004
COPYRIGHT (C) 2004 IMSWORLD Publications Ltd
FILE 'IMSPRODUCT' ENTERED AT 15:19:42 ON 24 NOV 2004
COPYRIGHT (C) 2004 IMSWORLD Publications Ltd
FILE 'IMSRESEARCH' ENTERED AT 15:19:42 ON 24 NOV 2004
COPYRIGHT (C) 2004 IMSWORLD Publications Ltd
FILE 'JICST-EPLUS' ENTERED AT 15:19:42 ON 24 NOV 2004
COPYRIGHT (C) 2004 Japan Science and Technology Agency (JST)
```

FILE 'KOSMET' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 International Federation of the Societies of Cosmetics Chemists

FILE 'MEDICONF' ENTERED AT 15:19:42 ON 24 NOV 2004

FILE 'LIFESCI' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 Cambridge Scientific Abstracts (CSA)

```
COPYRIGHT (c) 2004 FAIRBASE Datenbank GmbH, Hannover, Germany
```

FILE 'MEDLINE' ENTERED AT 15:19:42 ON 24 NOV 2004

FILE 'NIOSHTIC' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 U.S. Secretary of Commerce on Behalf of the U.S. Government

FILE 'NTIS' ENTERED AT 15:19:42 ON 24 NOV 2004 Compiled and distributed by the NTIS, U.S. Department of Commerce. It contains copyrighted material. All rights reserved. (2004)

FILE 'NUTRACEUT' ENTERED AT 15:19:42 ON 24 NOV 2004 Copyright 2004 (c) MARKETLETTER Publications Ltd. All rights reserved.

FILE 'OCEAN' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 Cambridge Scientific Abstracts (CSA)

FILE 'PASCAL' ENTERED AT 15:19:42 ON 24 NOV 2004
Any reproduction or dissemination in part or in full,
by means of any process and on any support whatsoever
is prohibited without the prior written agreement of INIST-CNRS.
COPYRIGHT (C) 2004 INIST-CNRS. All rights reserved.

FILE 'PCTGEN' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 WIPO

FILE 'PHAR' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 PJB Publications Ltd. (PJB)

FILE 'PHARMAML' ENTERED AT 15:19:42 ON 24 NOV 2004 Copyright 2004 (c) MARKETLETTER Publications Ltd. All rights reserved.

FILE 'PHIC' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 PJB Publications Ltd. (PJB)

FILE 'PHIN' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 PJB Publications Ltd. (PJB)

FILE 'PROMT' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 Gale Group. All rights reserved.

FILE 'PROUSDDR' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 Prous Science

FILE 'PS' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 Thieme on STN

FILE 'RDISCLOSURE' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 Kenneth Mason Publications Ltd.

FILE 'SCISEARCH' ENTERED AT 15:19:42 ON 24 NOV 2004 Copyright (c) 2004 The Thomson Corporation.

FILE 'SYNTHLINE' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 Prous Science

FILE 'TOXCENTER' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 ACS

FILE 'USPATFULL' ENTERED AT 15:19:42 ON 24 NOV 2004 CA INDEXING COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'USPAT2' ENTERED AT 15:19:42 ON 24 NOV 2004 CA INDEXING COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'VETB' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 THE THOMSON CORPORATION

FILE 'VETU' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 THE THOMSON CORPORATION

FILE 'WATER' ENTERED AT 15:19:42 ON 24 NOV 2004 COPYRIGHT (C) 2004 Cambridge Scientific Abstracts (CSA)

FILE 'WPIDS' ENTERED AT 15:19:42 ON 24 NOV 2004

```
COPYRIGHT (C) 2004 THE THOMSON CORPORATION
 FILE 'WPIFV' ENTERED AT 15:19:42 ON 24 NOV 2004
 COPYRIGHT (C) 2004 THOMSON DERWENT
 FILE 'WPINDEX' ACCESS NOT AUTHORIZED
 => S vascular endothelial growth factor OR VEGF
   15 FILES SEARCHED...
   25 FILES SEARCHED...
   40 FILES SEARCHED...
   53 FILES SEARCHED...
   67 FILES SEARCHED...
          222417 VASCULAR ENDOTHELIAL GROWTH FACTOR OR VEGF
 => S electromagnetic field OR pulsed electromagnetic field
   24 FILES SEARCHED...
   47 FILES SEARCHED...
   66 FILES SEARCHED...
         143397 ELECTROMAGNETIC FIELD OR PULSED ELECTROMAGNETIC FIELD
 => S osteoclast OR osteoblast OR osteocyte
   40 FILES SEARCHED...
         219313 OSTEOCLAST OR OSTEOBLAST OR OSTEOCYTE
 => S osteoclast OR osteoblast OR osteocyte OR MG-63
   29 FILES SEARCHED...
   60 FILES SEARCHED..
         225328 OSTEOCLAST OR OSTEOBLAST OR OSTEOCYTE OR MG-63
 => S L1 AND L2 AND L3
   47 FILES SEARCHED...
              11 L1 AND L2 AND L3
 => DUP REM L5
DUPLICATE IS NOT AVAILABLE IN 'ADISINSIGHT, ADISNEWS, BIOCOMMERCE, DGENE,
DRUGMONOG2, FEDRIP, FOREGE, GENBANK, IMSPRODUCT, IMSRESEARCH, KOSMET,
MEDICONF, NUTRACEUT, PCTGEN, PHAR, PHARMAML, PROUSDDR, RDISCLOSURE, SYNTHLINE'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L5
                9 DUP REM L5 (2 DUPLICATES REMOVED)
=> D L6 1-9
L6
      ANSWER 1 OF 9 USPATFULL ON STN
        2004:254309 USPATFULL
AΝ
ΤI
        Profiling frequencies of receptor heterodimers
ΙN
        Chan-Hui, Po-Ying, Oakland, CA, UNITED STATES
        Shi, Yining, San Jose, CA, UNITED STATES
        Pidaparthi, Sailaja, Cupertino, CA, UNITED STATES
Dua, Rajiv, Manteca, CA, UNITED STATES
        Singh, Sharat, San Jose, CA, UNITED STATES US 2004197835 A1 20041007
PΙ
ΑТ
        US 2004-830543
                                  20040422 (10)
                            Α1
        Continuation of Ser. No. US 2003-623057, filed on 17 Jul 2003, PENDING
RLI
PRAI
        US 2002-398724P
                             20020725 (60)
        Utility
DT
        APPLICATION
FS
LN.CNT
       3087
INCL
        INCLM: 435/007.200
NCL
       NCLM: 435/007.200
IC
        [7]
       ICM: G01N033-53
       ICS: G01N033-567
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
16
     ANSWER 2 OF 9
                     USPATFULL on STN
ΑN
       2004:165331 USPATFULL
       Detecting receptor oligomerization
TI
       Chan-Hui, Po-Ying, Oakland, CA, UNITED STATES
IN
       Shi, Yining, San Jose, CA, UNITED STATES
       Pidaparthi, Sailaja, Cupertino, CA, UNITED STATES
Dua, Rajiv, Manteca, CA, UNITED STATES
       Singh, Sharat, San Jose, CA, UNITED STATES US 2004126818 A1 20040701
PT
ΑI
       US 2003-623057
                            Α1
                                 20030717 (10)
```

```
US 2002-398724P
 PRAI
                             20020725 (60)
 DT
         Utility
         APPLICATION
  FS
 LN.CNT 3173
 INCL
         INCLM: 435/007.200
 NCL
         NCLM: 435/007.200
 IC
         [7]
         ICM: G01N033-53
         ICS: G01N033-567
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 L6
      ANSWER 3 OF 9 USPATFULL ON STN
        2004:7064 USPATFULL
 AN
 TI
        Biological scaffold
        Connelly, Patrick R., Rochester, NY, UNITED STATES
 IN
        Babalola, Omotunde M., Long Island, NY, UNITED STATES
 PΙ
        US 2004005297
                                 20040108
                            Α1
 ΑI
        US 2002-190874
                            Α1
                                 20020708 (10)
        Utility
 DT
 FS
        APPLICATION
 LN.CNT 831
        INCLM: 424/093.700
 INCL
        INCLS: 424/423.000; 435/366.000
 NCL
        NCLM:
               424/093.700
        NCLS:
               424/423.000; 435/366.000
        [7]
 IC
        ICM: A61K045-00
        ICS: C12N005-08
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
      ANSWER 4 OF 9 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED.
 L6
      on STN
      2004394057 EMBASE
 ΑN
      New developments and insights learned from distraction osteogenesis.
 ΤI
 ΑU
      Li G.
      G. Li, Dept. of Trauma and Orthoped. Surg., Queen's University_Belfast,
 CS
      Musgrave Park Hospital, Stockman's Lane, Belfast, BT9 7JB, Ireland.
      G.Li@qub.ac.uk
      Current Opinion in Orthopaedics, (2004) 15/5 (325-330).
 SO
      ISSN: 1041-9918 CODEN: COORE
 CY
      United States
DT
      Journal; General Review
 FS
      011
              Otorhinolaryngology
      027
              Biophysics, Bioengineering and Medical Instrumentation
              Orthopedic Surgery
      033
              Health Policy, Economics and Management
      036
     037
              Drug Literature Index
ΙA
     English
SL
     English
L6
     ANSWER 5 OF 9
                    USPATFULL on STN
                                                          DUPLICATE 1
ΑN
       2003:245226
                    USPATFULL
       Electromagnetic method of treatment of lesions associated with
TT
       inadequate blood perfusion, partial denervation, tissue loss, pain,
       edema, inflammation and infection
IN
       Canedo, Luis, Colonia del Yalle C.P., MEXICO
PI
       US 2003171640
                           Α1
                                20030911
       US 6733435
                           В2
                                20040511
ΑI
       US 2002-92801
                           Α1
                                20020308 (10)
       Utility
DT
FS
       APPLICATION
LN CNT 1956
INCL
       INCLM: 600/009.000
NCL
       NCLM: 600/009.000
IC
       [7]
       ICM: A61N002-00
       ICS: A61B017-52
L6
     ANSWER 6 OF 9
                    USPATFULL on STN
ΑN
       2003:237325
                    USPATFULL
TI
       methods and compositions for tissue regeneration
IN
       Rolland, Eric, Divonne les bains, FRANCE
       Hunziker, Thomas, Oberhofen, SWITZERLAND
       Mis, Beatrice, Lausanne, SWITZERLAND
       Rinsch, Christopher, Lausanne, SWITZERLAND
```

```
PΙ
        US 2003165482
                             Α1
                                  20030904
 ΑI
        us 2002-324257
                                  20021219 (10)
                             Α1
        Continuation-in-part of Ser. No. US 2001-943114, filed on 30 Aug 2001,
 RLI
        PENDING
        US 2002-408565P
 PRAI
                              20020906 (60)
        US 2000-230286P
                              20000901 (60)
        US 2001-299003P
                              20010618 (60)
        Utility
 DT
        APPLICATION
 FS
 LN.CNT 2521
 INCL
        INCLM: 424/093.210
        INCLS: 424/093.700
 NCL
        NCLM:
               424/093.210
        NCLS:
                424/093.700
        [7]
 TC
        ICM: A61K048-00
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
      ANSWER 7 OF 9 USPATFULL on STN
 L6
 ΑN
        2003:86159
                    USPATFULL
 TI
        Multiplexed cell analysis system
 IN
        Raykin, Ilya, Palo Alto, CA, UNITED STATES
        Goldbard, Simon, San Jose, CA, UNITED STATES
        Hyun, William C., San Francisco, CA, UNITED STATES Zarowitz, Michael A., San Carlos, CA, UNITED STATES
        Beske, Oren E., Belmont, CA, UNITED STATES
PΙ
        US 2003059764
                                  20030327
                            Α1
        US 2002-120900
ΑI
                            Α1
                                  20020410 (10)
PRAI
        WO 2001-US51413
                             20011018
        US 2001-293863P
                             20010524
                                       (60)
        US 2001-299267P
                             20010618
                                       (60)
        US 2001-299810P
                             20010620
                                       (60)
        US 2001-307649P
                             20010724 (60)
        US 2001-307650P
                             20010724
                                       (60)
        US 2001-310540P
                             20010806 (60)
        US 2001-317409P
                             20010904 (60)
        US 2001-318156P
                             20010907 (60)
        US 2001-328614P
                             20011010 (60)
DT
        Utility
        APPLICATION
FS
LN.CNT 5965
INCL
        INCLM: 435/004.000
        INCLS: 435/007.210
NCL
              435/004.000
        NCLM:
        NCLS:
               435/007.210
IC
        [7]
        ICM: C12Q001-00
        ICS: G01N033-567
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
L6
     ANSWER 8 OF 9
                     USPATFULL on STN
       2003:129490 USPATFULL
AN
TI
       Method and an apparatus for stimulating/ modulating biochemical
       processes using
                           ***pulsed***
                                             ***electromagnetic***
          ***fields***
ΙN
       Dissing, Steen, Charlottenlund, DENMARK
       Unden, Mogens, Hornbaek, DENMARK
       Larsen, Teddy Hebo, Hvidovre, DENMARK
       Schou, Soren, Holte, DENMARK
       Petersen, Hans Nissen, Lynge, DENMARK
PΑ
       BioFields ApS, Copenhagen, DENMARK (non-U.S. corporation)
PΙ
       us 6561968
                                 20030513
                           в1
       US 2000-650044
ΑI
                                 20000829 (9)
       DK 1999-1207
PRAI
                             19990831
       US 1999-157042P
                             19991001 (60)
DT
       Utility
FS
       GRANTED
LN.CNT 1402
INCL
       INCLM: 600/013.000
       NCLM: 600/013.000
NCL
IC
       [7]
       ICM: A61N002-02
EXF
       600/9-15
L6
     ANSWER 9 OF 9 USPATFULL on STN
```

2002:92046 USPATFULL

AN

DUPLICATE 2

```
Methods and compositions for tissue regeneration Baetge, E. Edward, St Sulpice, SWITZERLAND
 TI
 IN
         Hunziker, Thomas, Oberhofen, SWITZERLAND
         Ronfard, Vincent, Lausanne, SWITZERLAND
         US 2002048563
 ΡI
                                    20020425
                              Α1
         us 6673603
                               В2
                                    20040106
         US 2001-943114
 ΑI
                                    20010830 (9)
                               Α1
 PRAI
         US 2000-230286P
                               20000901 (60)
         US 2001-299003P
                                20010618 (60)
         Utility
 DT
 FS
         APPLICATION
 LN.CNT 1222
 INCL
         INCLM: 424/093.700
         INCLS: 435/366.000; 435/368.000
         NCLM: 435/325.000
 NCL
         NCLS:
                435/366.000; 435/371.000
 IC
         [7]
         ICM: A61K045-00
         ICS: C12N005-08
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 => S human vascular endothelial cell
   12 FILES SEARCHED...
   16 FILES SEARCHED...
   25 FILES SEARCHED...
   32 FILES SEARCHED...
   46 FILES SEARCHED...
   53 FILES SEARCHED...
   65 FILES SEARCHED...
            7573 HUMAN VASCULAR ENDOTHELIAL CELL
 => S L1 AND L2 AND L7
   55 FILES SEARCHED...
               0 L1 AND L2 AND L7
=> S endothelial cell
   14 FILES SEARCHED...
   25 FILES SEARCHED...
   32 FILES SEARCHED...
   53 FILES SEARCHED...
   68 FILES SEARCHED...
         843841 ENDOTHELIAL CELL
=> S L1 AND L2 AND L9
  51 FILES SEARCHED...
L10
              35 L1 AND L2 AND L9
=> DUP REM L10
DUPLICATE IS NOT AVAILABLE IN 'ADISINSIGHT, ADISNEWS, BIOCOMMERCE, DGENE,
DRUGMONOG2, FEDRIP, FOREGE, GENBANK, IMSPRODUCT, IMSRESEARCH, KOSMET,
MEDICONF, NUTRACEUT, PCTGEN, PHAR, PHARMAML, PROUSDDR, RDISCLOSURE, SYNTHLINE'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L10
L11
               33 DUP REM L10 (2 DUPLICATES REMOVED)
=> D L11 1-33
L11
     ANSWER 1 OF 33 USPATFULL ON STN
        2004:254309 USPATFULL
ΑN
TI
        Profiling frequencies of receptor heterodimers
        Chan-Hui, Po-Ying, Oakland, CA, UNITED STATES Shi, Yining, San Jose, CA, UNITED STATES
ΙN
       Pidaparthi, Sailaja, Cupertino, CA, UNITED STATES
Dua, Rajiv, Manteca, CA, UNITED STATES
        Singh, Sharat, San Jose, CA, UNITED STATES US 2004197835 A1 20041007
       US 2004197835 US 2004-830543
ΡI
AΙ
                                 20040422 (10)
                             Α1
       Continuation of Ser. No. US 2003-623057, filed on 17 Jul 2003, PENDING
RLI
       US 2002-398724P
PRAI
                              20020725 (60)
DT
       Utility
FS
       APPLICATION
       3087
LN.CNT
INCL
       INCLM: 435/007.200
NCL
       NCLM: 435/007.200
        [7]
IC
```

```
ICM: G01N033-53
            ICS: G01N033-567
  CAS INDEXING IS AVAILABLE FOR THIS PATENT.
        ANSWER 2 OF 33 USPATFULL on STN
 L11
 ΑN
           2004:179392 USPATFULL
 TI
           Devices, systems and methods for acute or chronic delivery of substances
           or apparatus to extravascular treatment sites
           Makower, Joshua, Los Altos, CA, UNITED STATES
Lamson, Theodore C., Pleasanton, CA, UNITED STATES
 IN
           Flaherty, J. Christopher, Topsfield, MA, UNITED STATES
           Reggie, John A., Palo Alto, CA, UNITED STATES
           Chang, Johny Y., Mountain View, CA, UNITED STATES
Cantanese III, Joseph, Redwood City, CA, UNITED STATES
Tholfsen, David R., San Leandro, CA, UNITED STATES
US 2004138562 A1 20040715
 ΡI
 ΑI
           US 2004-466622
                                      Α1
                                             20040301 (10)
           WO 2002-US1168
                                             20020117
 DT
           Utility
 FS
           APPLICATION
 LN.CNT 2559
 INCL
           INCLM: 600/439.000
           INCLS: 604/164.010
 NCL
           NCLM:
                     600/439.000
           NCLS:
                     604/164.010
 IC
           [7]
           ICM: A61M005-178
        ANSWER 3 OF 33 USPATFULL on STN
 L11
           2004:166353 USPATFULL
 ΑN
 TI
           Glaucoma implant with therapeutic agents
 IN
           Tu, Hosheng, Newport Coast, CA, UNITED STATES
           Niksch, Barbara, Laguna Niguel, CA, UNITED STATES
          Haffner, David, Mission Viejo, CA, UNITED STATES
           Smedley, Gregory, Aliso Viejo, CA, UNITED STATES US 2004127843 A1 20040701
 PΙ
                                             20040701
 ΑI
           US 2003-706300
                                             20031112 (10)
                                     Α1
          Continuation—in—part of Ser. No. US 2003—395633, filed on 21 Mar 2003, PENDING Continuation of Ser. No. US 2000—549350, filed on 14 Apr 2000, GRANTED, Pat. No. US 6638239 Continuation—in—part of Ser. No. US 2003—634213, filed on 5 Aug 2003, PENDING Continuation—in—part of Ser. No. US 2002—118578, filed on 8 Apr 2002, PENDING Continuation—in—part of Ser. No. US 2001—46137, filed on 8 Nov 2001, PENDING US 2002—401166P 20020805 (60)
 RLI
PRAI
          US 2003-451226P
                                       20030228 (60)
          US 2001-281973P
                                       20010407 (60)
          US 2001-281247P
                                       20010403 (60)
          US 2002-425911P
                                       20021112 (60)
          US 2002-431918P
                                       20021209 (60)
DT
          Utility
          APPLICATION
FS
LN.CNT 3772
INCL
          INCLM: 604/027.000
NCL
          NCLM: 604/027.000
IC
          [7]
          ICM: A61M001-00
L11
       ANSWER 4 OF 33 USPATFULL on STN
          2004:165331 USPATFULL
ΑN
TI
          Detecting receptor oligomerization
          Chan-Hui, Po-Ying, Oakland, CA, UNITED STATES Shi, Yining, San Jose, CA, UNITED STATES
IN
          Pidaparthi, Sailaja, Cupertino, CA, UNITED STATES
Dua, Rajiv, Manteca, CA, UNITED STATES
          Singh, Sharat, San Jose, CA, UNITED STATES US 2004126818 A1 20040701
PΙ
ΑI
          US 2003-623057
                                     Α1
                                            20030717 (10)
PRAI
          US 2002-398724P
                                      20020725 (60)
          Utility
DT
FS
          APPLICATION
LN.CNT
         3173
INCL
          INCLM: 435/007.200
NCL
          NCLM: 435/007.200
IC
          [7]
          ICM: G01N033-53
          ICS: G01N033-567
```

```
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 L11
      ANSWER 5 OF 33 USPATFULL ON STN
        2004:126836 USPATFULL
 AN
        Method of identifying an eventual modification of at least one
 ΤI
        biological parameter making use of living cells which are subjected to a
        stress and living cells which are not subjected to this same stress
        Perrier, Eric, Les Cotes d'Arey, FRANCE
 IN
        Andre, Valerie, Ampuis, FRANCE
        Grenier, Stephane, Luzinay, FRANCE
        Reymermier, Corinne, Charly, FRANCE
        COLETICA, Lyon, FRANCE (non-U.S. corporation)
 PA
 ΡI
        US 2004096815
                             Α1
                                   20040520
 ΑI
        US 2003-365853
                             Α1
                                   20030212 (10)
 PRAI
        FR 2002-14491
                              20021119
DT
        Utility
 FS
        APPLICATION
LN.CNT 1908
INCL
        INCLM: 435/004.000
        NCLM: 435/004.000
NCL
IC
        [7]
        ICM: C12Q001-02
        ICS: C12Q001-00
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
     ANSWER 6 OF 33 USPATFULL on STN 2004:71125 USPATFULL
L11
AN
ΤI
        Autologous vascular grafts created by vessel distension
IN
        Vito, Raymond P., Atlanta, GA, UNITED STATES
        Griffis, Jack C., III, Decatur, GA, UNITED STATES
PT
        US 2004054354
                             Α1
                                  20040318
AΤ
        US 2003-601963
                             Α1
                                  20030623 (10)
        Continuation of Ser. No. US 2001-994241, filed on 27 Nov 2001, GRANTED,
RLI
        Pat. No. US 6663617 Continuation-in-part of Ser. No. US 1999-322095,
        filed on 28 May 1999, GRANTED, Pat. No. US 6322553
US 2001-274909P 20010309 (60)
PRAI
        US 1998-87027P
                              19980528 (60)
DT
        Utility
FS
        APPLICATION
LN.CNT 1235
INCL
        INCLM: 606/001.000
NCL
        NCLM:
               606/001.000
IC
        [7]
        ICM: A61B017-00
L11
     ANSWER 7 OF 33 USPATFULL on STN
        2004:58261 USPATFULL
ΑN
        Device and method for creating a vascular graft in vitro
ΤI
ΙN
             Raymond P., Atlanta, GA, UNITED STATES
        Griffis, Jack C., III, Decatur, GA, UNITED STATES
        US 2004044268
PΙ
                            Α1
                                  20040304
ΑI
        us 2003-652775
                                  20030829 (10)
                            Α1
        Division of Ser. No. US 2001-994500, filed on 27 Nov 2001, GRANTED, Pat.
RLI
        No. US 6641576 Continuation-in-part of Ser. No. US 1999-322095, filed on
        28 May 1999, GRANTED, Pat. No. US 6322553
PRAI
        US 2001-274702P
                              20010309 (60)
        US 1998-87027P
                              19980528 (60)
        Utility
DT
FS
        APPLICATION
LN.CNT 1091
INCL
        INCLM: 600/036.000
        INCLS: 435/401.000
               600/036.000
NCL
        NCLM:
        NCLS:
               435/401.000
IC
        [7]
        ICM: C12N005-08
L11
     ANSWER 8 OF 33 USPATFULL on STN
AN
       2004:31276 USPATFULL
        Biospecific contrast agents
TI
       Sokolov, Konstantin, Austin, TX, UNITED STATES
Korgel, Brian A., Round Rock, TX, UNITED STATES
Ellington, Andrew D., Austin, TX, UNITED STATES
IN
       Richards-Kortum, Rebecca, Austin, TX, UNITED STATES
PΙ
       US 2004023415
                                  20040205
                            Α1
ΑI
       US 2003-382136
                                  20030305 (10)
```

Α1

```
PRAI
        US 2002-361924P
                              20020305 (60)
 DT
        Utility
        APPLICATION
 FS
 LN.CNT 3948
        INCLM: 436/518.000
 INCL
 NCL
        NCLM: 436/518.000
 IC
        [7]
        ICM: G01N033-543
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
      ANSWER 9 OF 33 USPATFULL on STN
111
        2004:12604 USPATFULL
ΑN
 ΤI
        Contrast agents
        Klaveness, Jo, Oslo, NORWAY
Naevestad, Anne, Oslo, NORWAY
ΙN
        Tolleshaug, Helge, Oslo, NORWAY
        AMERSHAM HEALTH AS, Oslo, NORWAY (non-U.S. corporation)
PA
        US 2004009122
PΙ
                                  20040115
                            A1
ΑI
        US 2003-462836
                            Α1
                                  20030617 (10)
        Continuation of Ser. No. US 1999-422977, filed on 22 Oct 1999, GRANTED,
RLI
        Pat. No. US 6610269 Continuation of Ser. No. WO 1998-GB1197, filed on 24
        Apr 1998, UNKNOWN
PRAI
        GB 1997-8265
                              19970424
        US 1997-48044P
                             19970530 (60)
DT
        Utility
FS
        APPLICATION
LN.CNT 2460
INCL
        INCLM: 424/009.100
        INCLS: 424/178.100; 530/391.100
               424/009.100
NCL
        NCLM:
               424/178.100; 530/391.100
        NCLS:
IC
        [7]
        ICM: A61K049-00
        ICS: A61K039-395; C07K016-46
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
L11
     ANSWER 10 OF 33 USPATFULL on STN
        2004:7064 USPATFULL Biological scaffold
ΑN
TI
IN
        Connelly, Patrick R., Rochester, NY, UNITED STATES
        Babalola, Omotunde M., Long Island, NY, UNITED STATES US 2004005297 A1 20040108
ΡI
ΑI
        US 2002-190874
                            Α1
                                  20020708 (10)
DT
        Utility
FS
        APPLICATION
LN.CNT 831
INCL
        INCLM: 424/093.700
        INCLS: 424/423.000; 435/366.000
NCL
               424/093.700
        NCLM:
        NCLS:
               424/423.000; 435/366.000
IC
        [7]
        ICM: A61K045-00
        ICS: C12N005-08
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
L11
     ANSWER 11 OF 33 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation.
     STN
AN
     2004:287988 BIOSIS
DN
     PREV200400286745
     Pulsed 50 Hz electrical fields cause activation of tyrosine kinase related
     cellular signalling in PAE cells and stimulate angiogenesis.
     Jensen, Ulrik L [Reprint Author]; Tritsaris, Katerina; Hansen, Anker J;
     Dissing, Steen
     Department of Medical Physiology, University of Copenhagen, Blegdamsvej 3,
     Copenhagen, 2200N, Denmark
     ulytt@mfi.ku.dk
     FASEB Journal, (2004) Vol. 18, No. 4-5, pp. Abst. 669.6.
S<sub>0</sub>
     http://www.fasebj.org/. e-file.
     Meeting Info.: FASEB Meeting on Experimental Biology: Translating the
     Genome. Washington, District of Columbia, USA. April 17-21, 2004. FASEB.
     ISSN: 0892-6638 (ISSN print).
     Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
DT
     English
     Entered STN: 16 Jun 2004
ED
     Last Updated on STN: 16 Jun 2004
```

```
ANSWER 12 OF 33
 L11
                       USPATFULL on STN
                                                           DUPLICATE 1
        2003:113821
                     USPATFULL
 ΑN
        Methods and apparatus for acute or chronic delivery of substances or
 TI
        apparatus to extravascular treatment sites
        Makower, Joshua, Los Altos, CA, UNITED STATES
 IN
        Lamson, Theodore C., Pleasonton, CA, UNITED STATES
        Flaherty, J. Christopher, Topsfield, MA, UNITED STATES
        Reggie, John A., Palo Alto, CA, UNITED STATES
        Chang, John Y., Mountain View, CA, UNITED STATES
        Catanese, Joseph, III, Redwood City, CA, UNITED STATES
        Tholfsen, David R., San Francisco, CA, UNITED STATES
        TransVascular, Inc., Menlo Park, CA, UNITED STATES, 94025 (U.S.
 PA
        corporation)
        US 2003078562
PΙ
                           A1
                                 20030424
        US 6602241
                           В2
                                 20030805
        US 2001-766502
AT
                           Α1
                                 20010117 (9)
        Utility
DT
        APPLICATION
FS
LN.CNT 1842
INCL
        INCLM: 604/509.000
NCL
        NCLM:
              604/509.000
        NCLS:
              604/103.010; 604/164.010; 604/164.080
        [7]
IC
        ICM: A61M031-00
L11
     ANSWER 13 OF 33 USPATFULL on STN
        2003:306901 USPATFULL
AN
TI
        Composition and imaging methods for pharmacokinetic and pharmacodynamic
        evaluation of therapeutic delivery system
ΙN
       Hallahan, Dennis E., Nashville, TN, UNITED STATES
PA
        Vanderbilt University (U.S. corporation)
PΙ
       US 2003216337
                           A1
                                 20031120
ΑI
       US 2003-342805
                           Α1
                                 20030115 (10)
PRAI
       US 2002-348945P
                            20020115 (60)
       Utility
DT
FS
       APPLICATION
LN.CNT 2902
INCL
        INCLM: 514/044.000
        INCLS: 424/001.730
NCL
               514/044.000
       NCLM:
       NCLS:
               424/001.730
IC
        [7]
       ICM: A61K051-00
       ICS: A61K048-00
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
L11
     ANSWER 14 OF 33 USPATFULL on STN
ΑN
       2003:289289 USPATFULL
TI
       Peptide-based compounds
ΙN
       Cuthbertson, Alan, Oslo, NORWAY
       Indrevoll, Bard, Oslo, NORWAY
PΙ
       US 2003204049
                           Α1
                                20031030
ΑI
       US 2002-269575
                           Α1
                                20021011 (10)
       Continuation of Ser. No. WO 2001-No146, filed on 6 Apr 2001, UNKNOWN
RLI
PRAI
       GB 2000-9042
                            20000412
       GB 2000-25070
                            20001012
       US 2000-211337P
                            20000613 (60)
DT
       Utility
       APPLICATION
FS
LN.CNT 1298
INCL
       INCLM: 530/317.000
       INCLS: 514/009.000
NCL
       NCLM:
               530/317.000
       NCLS:
              514/009.000
       [7]
IC
       ICM: A61K038-12
       ICS: C07K007-64
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
L11
     ANSWER 15 OF 33 USPATFULL on STN
       2003:251850
AN
                    USPATFULL
       Peptide-based compounds
TI
       Cuthbertson, Alan, Oslo, NORWAY
ΙN
PΙ
       us 2003176639
                                20030918
                           Α1
       us 2003-395500
ΑI
                                20030324 (10)
```

Α1

```
Continuation of Ser. No. WO 2001-NO390, filed on 25 Sep 2001, UNKNOWN
RLI
                              20000926
 PRAI
        NO 2000-4795
        US 2001-259919P
                              20010105 (60)
DT
        Utility
        APPLICATION
FS
LN.CNT
        916
INCL
        INCLM: 530/317.000
        INCLS: 530/322.000; 424/009.340
NCL
                530/317.000
                530/322.000; 424/009.340
        NCLS:
IC
        [7]
        ICM: A61K049-00
        ICS: A61K038-12; C07K009-00; A61K038-14
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
     ANSWER 16 OF 33 USPATFULL on STN 2003:237325 USPATFULL
L11
AN
        Methods and compositions for tissue regeneration
TI
IN
        Rolland, Eric, Divonne les bains, FRANCE
        Hunziker, Thomas, Oberhofen, SWITZERLAND
        Mis, Beatrice, Lausanne, SWITZERLAND
        Rinsch, Christopher, Lausanne, SWITZERLAND
PΙ
        US 2003165482
                                  20030904
                            Α1
        US 2002-324257
ΑI
                            Α1
                                  20021219 (10)
        Continuation-in-part of Ser. No. US 2001-943114, filed on 30 Aug 2001,
RLI
        PENDING
PRAI
        US 2002-408565P
                              20020906 (60)
20000901 (60)
        US 2000-230286P
        US 2001-299003P
                              20010618 (60)
DT
        Utility
        APPLICATION
FS
LN.CNT 2521
INCL
        INCLM: 424/093.210
        INCLS: 424/093.700
NCL
        NCLM:
               424/093.210
               424/093.700
        NCLS:
IC
        [7]
        ICM: A61K048-00
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
L11
     ANSWER 17 OF 33 USPATFULL on STN
        2003:86159 USPATFULL
ΑN
TI
        Multiplexed cell analysis system
ΙN
        Ravkin, Ilya, Palo Alto, CA, UNITED STATES
        Goldbard, Simon, San Jose, CA, UNITED STATES
        Hyun, William C., San Francisco, CA, UNITED STATES
Zarowitz, Michael A., San Carlos, CA, UNITED STATES
        Beske, Oren E., Belmont, CA, UNITED STATES
        US 2003059764
ΡI
                                  20030327
                            Α1
ΑI
        US 2002-120900
                            Α1
                                  20020410 (10)
PRAI
        wo 2001-us51413
                             20011018
        US 2001-293863P
                              20010524
                                       (60)
       US 2001-299267P
                              20010618
                                       (60)
       US 2001-299810P
                             20010620
                                       (60)
                             20010724
       US 2001-307649P
                                       (60)
       US 2001-307650P
                             20010724
                                       (60)
        US 2001-310540P
                             20010806 (60)
                             20010904 (60)
       US 2001-317409P
       US 2001-318156P
                             20010907
                                       (60)
       US 2001-328614P
                             20011010 (60)
DT
       Utility
FS
       APPLICATION
LN.CNT
       5965
INCL
       INCLM: 435/004.000
       INCLS: 435/007.210
NCL
               435/004.000
       NCLM:
       NCLS:
               435/007.210
IC
        [7]
       ICM: C12Q001-00
       ICS: G01N033-567
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
     ANSWER 18 OF 33 USPATFULL on STN
L11
ΑN
       2003:72405
                    USPATFULL
       Delivery of therapeutic capable agents
TI
ΙN
       Sirhan, Motasim, Sunnyvale, CA, UNITED STATES
```

```
Yan, John, Los Gatos, CA, UNITED STATES
PA
        Avantec Vascular Corporation, Sunnyvale, CA, 94089 (U.S. corporation)
                                  20030313
PΙ
        us 2003050692
                            Α1
ΑI
        US 2002-206807
                            Α1
                                  20020725 (10)
        Continuation-in-part of Ser. No. US 2001-2595, filed on 1 Nov 2001
RLI
        PENDING Continuation-in-part of Ser. No. US 2001-783253, filed on 13 Feb
        2001, PENDING Continuation-in-part of Ser. No. US 2001-782927, filed on
        13 Feb 2001, GRANTED, Pat. No. US 6471980 Continuation-in-part of Ser. No. US 2001-783254, filed on 13 Feb 2001, PENDING Continuation-in-part
        of Ser. No. US 2001-782804, filed on 13 Feb 2001, PENDING
        Continuation-in-part of Ser. No. US 2001-17500, filed on 14 Dec 2001,
        PENDING
                              20020406 (60)
PRAI
        US 2002-370703P
        US 2002-355317P
                              20020207 (60)
        US
           2002-347473P
                              20020110 (60)
                              20010726 (60)
        US
          2001-308381P
        US 2000-258024P
                              20001222 (60)
DT
        Utility
        APPLICATION
FS
LN.CNT 2572
INCL
        INCLM: 623/001.420
        INCLS: 623/001.430
NCL
               623/001.420
        NCLM:
        NCLS:
               623/001.430
IC
        [7]
        ICM: A61F002-06
     ANSWER 19 OF 33 USPATFULL on STN 2003:51814 USPATFULL
L11
ΑN
        Systems and methods for treatment of coronary artery disease
ΤI
IN
        Whitehurst, Todd K., Frazier Park, CA, UNITED STATES
        McGivern, James P., Stevenson Ranch, CA, UNITED STATES
        McClure, Kelly H., Simi Valley, CA, UNITED STATES
        Stultz, Mark R., Maple Grove, MN, UNITED STATES
PΙ
                                  20030220
        US 2003036773
                            Α1
        US 2002-211463
                                  20020802 (10)
ΑI
                            A1
PRAI
        US 2001-310445P
                             20010803 (60)
        Utility
DT
FS
        APPLICATION
LN.CNT
       1292
INCL
        INCLM: 607/003.000
        INCLS: 607/120.000
               607/003.000
NCL
        NCLM:
        NCLS:
               607/120.000
IC
        [7]
        ICM: A61N001-36
L11
     ANSWER 20 OF 33 USPATFULL on STN
        2003:326767 USPATFULL
ΑN
TI
        Devices for creating vascular grafts by vessel distension using fixed
        post and moveable driver elements
        Vito, Raymond P., N.W. Atlanta, GA, United States
Griffis, III, Jack C., Decatur, GA, United States
ΙN
        Georgia Tech Research Corporation, Atlanta, GA, United States (U.S.
PA
        corporation)
PΙ
        US 6663617
                                  20031216
                            В1
        US 2001-994241
                                  20011127 (9)
AΙ
        Continuation-in-part of Ser. No. US 1999-322095, filed on 28 May 1999,
RLI
        now patented, Pat. No. US 6322553
PRAI
        US 2001-274909P
                             20010309 (60)
        US 1998-87027P
                             19980528 (60)
DT
        Utility
FS
        GRANTED
LN.CNT
       1299
INCL
        INCLM: 606/001.000
        INCLS: 600/036.000; 606/159.000; 606/194.000; 623/001.100; 623/903.000
NCL
               606/001.000
       NCLM:
       NCLS:
               600/036.000; 606/159.000; 606/194.000; 623/001.100; 623/903.000
        [7]
        ICM: A61B017-00
        ICS: A61F002-04
EXF
       606/1; 606/159; 606/194; 600/36; 623/1.1; 623/903
L11
     ANSWER 21 OF 33 USPATFULL ON STN
       2003:290914 USPATFULL
ΑN
TI
       Devices for creating vascular grafts by vessel distension using
```

```
rotatable elements
       Vito, Raymond P., Atlanta, GA, United States
ΙN
       Griffis, III, Jack C., Decatur, GA, United States
       Georgia Tech Research Corporation, Atlanta, GA, United States (U.S.
PA
       corporation)
       us 6641576
PΙ
                                 20031104
       US 2001-994500
                                 20011127 (9)
AΙ
       Continuation-in-part of Ser. No. US 1999-322095, filed on 28 May 1999,
RLI
       now patented, Pat. No. US 6322553
       US 1998-87027P
                            19980528 (60)
PRAI
       US 2001-274702P
                            20010309 (60)
DT
       Utility
       GRANTED
FS
LN.CNT 1150
       INCLM: 606/001.000
INCL
              600/036.000; 606/159.000; 606/194.000; 623/001.100; 623/903.000
       INCLS:
NCL
               606/001.000
       NCLM:
              600/036.000; 606/159.000; 606/194.000; 623/001.100; 623/903.000
       NCLS:
       [7]
IC
       ICM: A61B017-00
       ICS: A61F002-04
EXF
       606/1; 606/159; 606/194; 600/36; 623/1.1; 623/903
L11
     ANSWER 22 OF 33 USPATFULL on STN
       2003:228144 USPATFULL
AN
TI
       Contrast agents
       Klaveness, Jo, Oslo, NORWAY
Naevestad, Anne, Oslo, NORWAY
IN
       Tolleshaug, Helge, Oslo, NORWAY
PA
       Amersham Health AS, Oslo, NORWAY (non-U.S. corporation)
                                20030826
PΙ
       US 6610269
                           в1
       US 1999-422977
                                19991022 (9)
ΑI
       Continuation of Ser. No. WO 1998-GB1197, filed on 24 Apr 1998
RLI
PRAI
       GB 1997-8265
                            19970424
       US 1997-48044P
                            19970530 (60)
DT
       Utility
       GRANTED
FS
LN.CNT 2416
       INCLM: 424/009.100
INCL
       INCLS: 424/001.110; 424/001.650; 424/001.690
NCL
       NCLM:
              424/009.100
       NCLS:
              424/001.110; 424/001.650; 424/001.690
IC
       [7]
       ICM: A61K049-00
       424/1.11; 424/1.65; 424/1.69; 424/9.1; 424/9.3; 424/9.5; 424/9.51;
EXF
       128/9.52; 128/654; 128/653.2; 600/458; 600/441; 534/7; 534/10-16;
       435/320.1; 530/300
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
     ANSWER 23 OF 33 USPATFULL on STN
L11
       2003:129490 USPATFULL
AN
TI
       Method and an apparatus for stimulating/ modulating biochemical
                          ***pulsed***
                                           ***electromagnetic***
       processes using
         ***fields***
IN
       Dissing, Steen, Charlottenlund, DENMARK
       Unden, Mogens, Hornbaek, DENMARK
       Larsen, Teddy Hebo, Hvidovre, DENMARK
       Schou, Soren, Holte, DENMARK
       Petersen, Hans Nissen, Lynge, DENMARK
PA
       BioFields ApS, Copenhagen, DENMARK (non-U.S. corporation)
                                20030513
PΙ
       us 6561968
                           в1
       us 2000-650044
ΑI
                                20000829 (9)
PRAI
          1999-1207
                            19990831
       US
          1999-157042P
                            19991001 (60)
DT
       Utility
FS
       GRANTED
LN.CNT 1402
       INCLM: 600/013.000
INCL
NCL
              600/013.000
       NCLM:
IC
       [7]
       ICM: A61N002-02
       600/9-15
EXF
L11
     ANSWER 24 OF 33
                      JICST-EPlus COPYRIGHT 2004 JST on STN
     1030657360 JICST-EPlus
ΑN
ΤI
     A trial to enhance the effect of anticancer drug by pulsing
```

```
***electromagnetic***
                                     ***field***
                                                     stimulation on human dermal
                                             ***cell***
                       ***endothelial***
     microvascular
ΑU
      CHO DAIKO
      Jin Lin Univ.
CS
     Higashinippon Seikei Saigai Geka Gakkai Zasshi (Journal of the Eastern
SO
      Japan Association of Orthopaedics and Traumatology), (2003) vol. 15, no.
      3, pp. 529. Journal Code: L0773A
      ISSN: 1342-7784
CY
      Japan
      Journal; Preprint
DT
LA
     English
STA
     New
     ANSWER 25 OF 33 USPATFULL on STN
L11
                                                                DUPLICATE 2
        2002:92046 USPATFULL
ΑN
ΤI
        Methods and compositions for tissue regeneration
        Baetge, E. Edward, St Sulpice, SWITZERLAND
Hunziker, Thomas, Oberhofen, SWITZERLAND
Ronfard, Vincent, Lausanne, SWITZERLAND
IN
        US 2002048563
                                   20020425
PΙ
                              Α1
        us 6673603
                              в2
                                    20040106
        US 2001-943114
ΑI
                             Α1
                                   20010830 (9)
                              20000901 (60)
        US 2000-230286P
PRAI
        US 2001-299003P
                               20010618 (60)
DT
        Utility
FS
        APPLICATION
LN.CNT 1222
INCL
        INCLM: 424/093.700
        INCLS: 435/366.000; 435/368.000
               435/325.000
NCL
        NCLM:
        NCLS: 435/366.000; 435/371.000
        [7]
IC
        ICM: A61K045-00
        ICS: C12N005-08
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
     ANSWER 26 OF 33 USPATFULL on STN
L11
        2002:338410 USPATFULL
ΑN
TI
        Method and apparatus for heating inflammed tissue
IN
        Naghavi, Morteza, Houston, TX, UNITED STATES
        Guo, Bujin, Houston, TX, UNITED STATES
Lal, Birendra, Houston, TX, UNITED STATES
Casscells, S. Ward, III, Houston, TX, UNITED STATES
        Willerson, James T., Houston, TX, UNITED STATES
        US 2002193785
                                   20021219
                             À1
PΙ
ΑI
        us 2002-219595
                             Α1
                                   20020814 (10)
        Continuation of Ser. No. US 1999-473919, filed on 28 Dec 1999, GRANTED,
RLI
        Pat. No. US 6451044
                               19981231 (60)
PRAI
        US 1998-114326P
DT
        Utility
FS
        APPLICATION
LN.CNT 2011
INCL
        INCLM: 606/028.000
        INCLS: 607/096.000
                606/028.000
NCL
        NCLM:
                607/096.000
        NCLS:
        [7]
IC
        ICM: A61B018-04
     ANSWER 27 OF 33 USPATFULL on STN
L11
AN
        2002:244026 USPATFULL
ΤI
        Intravascular device and method for axially stretching blood vessels
        Vito, Raymond P., Atlanta, GA, UNITED STATES
Griffis, Jack C., III, Decatur, GA, UNITED STATES
US 2002133223 A1 20020919
IN
ΡI
                                   20020307 (10)
        us 2002-93715
ΑI
                              Α1
        US 2001-274703P
                               20010309 (60)
PRAI
DT
        Utility
        APPLICATION
FS
LN.CNT 870
        INCLM: 623/001.180
INCL
        INCLS: 623/001.380
        NCLM: 623/001.180
NCL
        NCLS:
                623/001.380
IC
        [7]
        ICM: A61F002-06
```

```
L11
    ANSWER 28 OF 33 USPATFULL ON STN
       2002:158065 USPATFULL
AN
       Delivery or therapeutic capable agents
TT
       Sirhan, Motasim, Sunnyvale, CA, UNITED STATES
IN
       Yan, John, Los Gatos, CA, UNITED STATES
       AVANTEC VÁSCULAR CORPORATION, San Jose, CA (U.S. corporation)
PA
                                  20020627
       us 2002082679
                            Α1
ΡI
       US 2001-2595
                                  20011101 (10)
                            Α1
ΑI
                             20001222 (60)
PRAI
       US 2000-258024P
       US 2001-308381P
                             20010726 (60)
DT
       Utility
       APPLICATION
FS
LN.CNT 3153
       INCLM: 623/001.150
INCL
       INCLS: 623/001.420; 424/426.000
               623/001.150
NCL
       NCLM:
               623/001.420; 424/426.000
       NCLS:
        [7]
IC
       ICM: A61F002-06
       ICS: A61F002-00
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
     ANSWER 29 OF 33 USPATFULL ON STN
L11
       2002:73092 USPATFULL
ΑN
       Pulsed electromagnetic energy treatment apparatus and method
ΤI
IN
       George, Frank R., Scottsdale, AZ, UNITED STATES
       Loya, Arthur A., Mesa, AZ, UNITED STATES Ritz, Mary C., Scottsdale, AZ, UNITED STATES Bryant, Robert T., Tempe, AZ, UNITED STATES US 2002040233 A1 20020404
PΙ
                            Α1
       us 2001-994598
                                  20011120 (9)
ΑI
       Continuation of Ser. No. US 1999-231790, filed on 15 Jan 1999, PATENTED
RLI
PRAI
       US 1998-71396P
                             19980115 (60)
DT
       Utility
FS
       APPLICATION
LN.CNT 1393
INCL
       INCLM: 607/002.000
NCL
       NCLM: 607/002.000
IC
        [7]
        ICM: A61N001-00
     ANSWER 30 OF 33 USPATFULL on STN
L11
       2002:238447 USPATFULL
ΑN
ΤI
       Method and apparatus for heating inflammed tissue
       Naghavi, Morteza, Houston, TX, United States
ΙN
       Guo, Bujin, Houston, TX, United States
        Lal, Birendra, Houston, TX, United States
       Casscells, III, S. Ward, Houston, TX, United States Willerson, James T., Houston, TX, United States
       Board of Regents, The University of Texas System, Austin, TX, United
PA
        States (U.S. corporation)
        Texas Heart Institute, Houston,
                                          TX, United States (U.S. corporation)
                                  20020917
        us 6451044
PT
                             в1
                                  19991228 (9)
       us 1999-473919
AΙ
       Continuation of Ser. No. US 1999-303313, filed on 30 Apr 1999
RLI
        Continuation of Ser. No. US 1997-934260, filed on 19 Sep 1997, now
        patented, Pat. No. US 5906636
PRAI
        US 1998-114326P
                              19981231 (60)
       US 1996-26418P
                              19960920 (60)
DT
       Utility
FS
        GRANTED
LN.CNT 2202
        INCLM: 607/096.000
INCL
        INCLS:
               623/001.420
               607/096.000
NCL
       NCLM:
               623/001.420
       NCLS:
IC
        [7]
        ICM: A61N001-00
        607/96; 607/100; 607/101; 606/32; 606/33; 623/1.19; 623/1.23; 623/1.42
EXF
     ANSWER 31 OF 33 USPATFULL ON STN
L11
        2002:46320 USPATFULL
ΑN
        Pulsed electromagnetic energy treatment apparatus and method
TI
        George, Frank R., Scottsdale, AZ, United States
IN
        Loya, Arthur A., Mesa, AZ, United States
```

```
Ritz, Mary C., Scottsdale, AZ, United States
Bryant, Robert T., Tempe, AZ, United States
PA
        Regenesis Biomedical, Inc., Scottsdale, AZ, United States (U.S.
        corporation)
PΙ
        us 6353763
                                   20020305
                             В1
        US 2000-604328
                                   20000627 (9)
ΑI
        Division of Ser. No. US 1999-231790, filed on 15 Jan 1999
RLI
        US 1998-71396P
PRAI
                              19980115 (60)
        Utility
DT
        GRANTED
FS
LN.CNT 1242
        INCLM: 607/050.000
INCL
        INCLS: 128/898.000; 607/154.000
NCLM: 607/050.000
NCL
        NCLS:
                128/898.000; 607/154.000
        [7]
IC
        ICM: A61N001-18
        607/2; 607/50; 607/96; 607/101; 607/103; 607/149-152; 607/154; 607/158;
EXF
        606/41; 128/898
L11
     ANSWER 32 OF 33 USPATFULL on STN
        2001:235940 USPATFULL
ΑN
ΤI
        Pulsed electromagnetic energy treatment apparatus and method
IN
        George, Frank R., Scottsdale, AZ, United States
        Loya, Arthur A., Mesa, AZ, United States
        Ritz, Mary C., Scottsdale, AZ, United States
Bryant, Robert T., Tempe, AZ, United States
PA
        Regenesis Biomedical, Inc., Scottsdale, AZ, United States (U.S.
        corporation)
PΙ
        us 6334069
                                   20011225
                             в1
        US 1999-231790
                                   19990115 (9)
ΑI
PRAI
        US 1998-71396P
                              19980115 (60)
        Utility
DT
FS
        GRANTED
LN.CNT 1525
INCL
        INCLM: 607/002.000
        INCLS: 607/050.000; 607/155.000
NCL
                607/002.000
        NCLM:
               607/050.000; 607/155.000
        NCLS:
        [7]
IC
        ICM: A61N001-40
        607/2; 607/50; 607/96; 607/101; 607/103; 607/149-152; 607/154; 607/155;
EXF
        600/14-15; 606/41
L11
     ANSWER 33 OF 33 USPATFULL on STN
        2000:83490 USPATFULL
ΑN
TI
        Magnetic field device and method for inhibiting angiogenesis and
        retarding growth rates of tumors in mammals
        Wascher, Rick R., Rock Island, TN, United States
ΙN
        Williams, C. Douglas, Signal Mountain, TN, United States
        Bouldin, Floyd E., Murfreesboro, TN, Únited States
EMF Therapeutics, Inc., Chattanooga, TN, United States (U.S.
PA
        corporation)
        us 6083149
PΙ
                                   20000704
ΑI
        us 1998-111769
                                   19980708 (9)
RLI
        Continuation-in-part of Ser. No. US 1997-955604, filed on 22 oct 1997
DT
        Utility
FS
        Granted
LN.CNT 963
        INCLM: 600/009.000
INCL
        NCLM: 600/009.000
NCL
IC
        [7]
        ICM: A61B017-52
        ICS: A61N002-00
        600/9; 600/10; 600/11; 600/13
FXF
```

STN INTERNATIONAL LOGOFF AT 15:42:21 ON 24 NOV 2004